Issue 102 • 20 October 1990 • 70p

NEW
MAC COLUMN STARTS THIS WEEK

FACT-PACKED 80 PAGE ISSUE

NEW COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

AMIGA
Workbench 2 for the A500 is only three months away

PC
The IBM PC which will run Sega Megadrive games

ATARI
STE hard disk faults - a cause for concern?

HACKING
Top UK hacker charged in video break-in shocker

COMMS
Directory Enquiries On-line!

AT LAST! A REAL MAC FOR £575

...and two more PC-beaters are all set to ship ...

FULL DETAILS ON PAGES 3&4

• The Macintosh LC

• The Macintosh IIsi

PLUS 48 PAGES OF BARGAINS

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AMIGA A590 CLONE
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NEW AMIGA WORDPERFECT
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frontend

edited by Colin Campbell

COMING DOWN TO EARTH

This is planet Earth. If someone told you that a computer manufacturer is attempting to re-create the entire weather patterns of this complex entity, you would expect them to stumble across a few problems. You would of course be absolutely correct.

American supercomputer manufacturer Cray has been forced to delay its world model computer which was to be shipped out to the planet's weather forecasters any time now. The machine, when it finally arrives, will help meteorologists accurately predict the weather six days before it happens (instead of the usual four or five).

The computer model consists of 62,496 points over Earth situated at 75Km intervals. It should be able to calculate weather patterns four times faster than the relatively primitive machines currently in use. Millions of snippets of information will be fed in every day from 134 countries around the world.

But Cray has already had to scrap an initial effort because it didn't work. And the new version is said to be a tad "unstable". Apparently, when it detects a depression it starts predicting a fully fledged storm, instead of a few hours drizzle.

But Cray is confidently predicting that the machine will be ready early next year – just in time for the really lousy weather.

Watch your grammar

If you wish you could write proper like what we do here, then Grammatik IV, the latest launch from DLL, is the program for you.

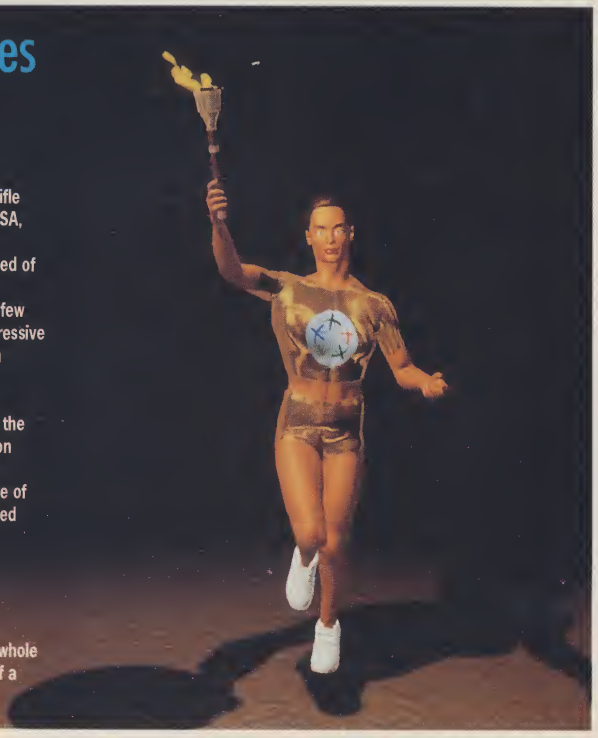
Americans bought $10 million worth of the program last year and DLL now feels ready to launch a British version at a retail price of £79.95.

Working like a spelling checker the program runs directly on files created by all the major word processors. It can find thousands of errors, let the user choose from six writing style options and compare writing styles to standards or corporate styles. Users can even add their own rules. Thinking it was perhaps something we could do with, we put it to the test - Turn to page 74 to see how it made out.

● Matsushita claims to have developed the world's thinnest and lightest 3.5-inch floppy disk drive (FDD). Designed exclusively for use on notebook-sized computers, the FDD, EME-27, weighs just 180 grammes and measures 15 x130 x 96 millimeters.

• A PC compatible full page scanner has been launched by OMD for £269. Paper is fed through the 300dpi machine in the same way as a fax. ScanPlus can be found on 0533 313188.

Olympia goes high tech

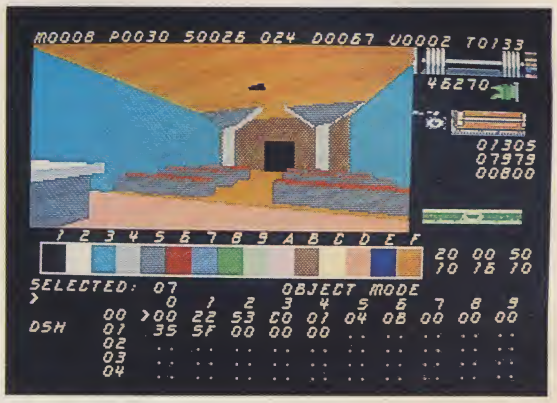


Quite a few people were just a trifle miffed when Atlanta, Georgia, USA, was selected to stage the 1996 Olympic Games. Some complained of financial muscle flexing and outrageous commercialism. But few could quibble with the city's impressive presentation at the final decision conference in Tokyo.

This animation of a computer generated athlete was central in the high-tech multimedia presentation which wowed attendants. It was developed at the Georgia Institute of Technology using graphics merged with real images shot on film by Acadamy Award nominated cinematographers.

Classical music used in the presentation was composed and generated on an Amiga and the whole thing was polished with the aid of a Macintosh.

Create your own 3D landscape



A program which will enable you to create your own three-dimensional computer environments is to be launched by games publisher Domark.

The 3D Construction Kit is based on Incentive's widely acclaimed *Freescape* environment, which was utilised to splendid effect in *Driller*, *Dark Side* and the more recent *Castle Master* (pictured).

But the rigid dimensions of normal gameplay have nothing to do with this software. In effect it's an interactive art package in which you can create any surrounding (perhaps a futuristic city, a woodland or underground maze) complete with characters or objects which you can animate.

A spokesman for Domark said: "The limits are set only by your imagination." It will be launched on the ST, Amiga, Spectrum, CPC and C64 in the spring. Prices have yet to be decided.

A little extra bite

There are some games that you can really get your teeth into, but this lovely young lady seems to have become just a bit too involved in the latest offering from Gonzo games – *The Brides of Dracula*.

Due for release in November, the game has been officially endorsed by the Transylvanian State Tourist Board.

The Romanian Embassy is currently keen on promoting Transylvania as a tourist area, which must be a bit of an up hill struggle at best.

The game, which is described as a "comedy bite-'em up", was designed, according to Gonzo's Paul Smith, to "inject a little humour into a well known concept like Dracula".

● A recent survey in *Young Telegraph* revealed that the second most popular pastime amongst boys aged 8 to 12 is playing computer games. Unsurprisingly, football came tops, but watching television was pushed back to third place.

● Another area of the job market is about to be invaded by computers. Human tasting experts who try out new artificial flavours could find themselves made redundant by a computer which has been developed at the University of California – it can tell how bitter or sweet a chemical is.

● With a price cut of £50 on all its VGA model monitors, Philips claims that the 3CM9609 is the first colour VGA - now at £299.99 - to break the £300 price barrier. The company is also reducing Super VGA monitors by £100.

KONIX CRUNCH

Hopes were fading last week for the future of the Multisystem games console as Konix, its British manufacturer, slipped into administrative receivership.

The company's debts are understood to be as high as £1million. The receiver, Peat Marwick McLintock, is hoping to sell the company to a major player in the computer entertainment industry. A well established manufacturer is the undeniable preference although, with most of the big names already committed to their own games consoles, the likelihood of a Commodore, Amstrad or Atari buy-out is minimal.

The Multisystem was welcomed rapturously early last year when it was first shown to the trade and press. However, by the time of the 1989 PC Show, problems became apparent as Konix failed to present the machine to the public. Interest has faded ever since. Before embarking on the ambitious Multisystem project Konix was regarded as a highly successful manufacturer of quality joysticks. There can be no doubt that the machine has entirely drained the company.

It had originally been pitched as an arcade machine for the home. The graphics were as good as those of an Amiga and it featured a selection of ingenious control yokes designed to complement racing, driving and flying games. Konix was even going to offer an *Afterburner* style arcade chair for the £200 machine.

Gamers must now hope a company with a great deal of money and confidence steps in to save the machine which was once touted as "the future of home entertainment".

Dangers of computing

Yet another doom-laden theory has been put forward concerning the allegedly terrible risks of computer use.

According to "electronics expert" Roger Coghill, computer monitors could be responsible for causing cancer, multiple sclerosis and even AIDS.

In his new book *Electropollution* he claims that radiation emitted from monitors weaken those parts of the brain which control the immune system. He says computers interfere with the development of the blood cells which destroy alien viruses.

"There is a very real danger from sitting in front of a computer screen for long periods," says Coghill. "The only means of protection is to use gas plasma screens and very low frequency screens."

Coghill also thinks cot deaths are due to normal household electrical appliances damaging babies' brains, and he says the increased incidence of cancer this century has something to do with electrical wiring in houses.

He goes on to claim: "A whole new order of mysterious diseases, including Yuppie Flu, Multiple Schlerosis and AIDS, has arisen, none of which can be linked to any particular virus, but all of which have distinct similarities to electro-magnetically engendered disorders."

• Current medical thinking does not subscribe to these theories, and no definite link has been found between any ailment and computer screen radiation. Is it possible that we are simply ignorant of the dangers of computing? Or is it inevitable that such machines will attract alarmist theories. What do you think? Drop us a line at the usual address.

Introducing Robopanda

You've seen the trailer at your local cinema. The one where the looters spectacularly blow up an approaching police car, just before a gleamingly resplendent Robocop fearlessly steps out to blast away everything in sight .

Well, it seems that the British police force is going to join the computer age, but it's not the boys in blue who are due for an overhaul – it's the good old panda car.

Speaking at the recent Police Constables' Conference, top cop Charles Kelly predicted that law enforcement vehicles of the future will be fitted with computers, electronic notebooks and sophisticated communications equipment, allowing officers to deliver reports without leaving their cars.

Traditional police stations will become redundant as officers start and finish their day at their homes. And an automatic vehicle location system will keep track of police cars at all times.

He went on to predict that car-to-car transmissions by voice and computer screen will be used to give and receive information, freeing policemen from the tons of paperwork which takes all the fun out of their jobs.

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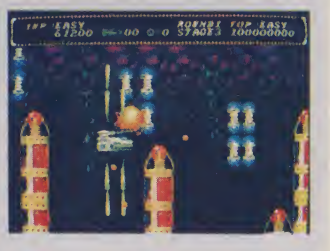

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Other New Apple Products?

Apple has a firm policy of never commenting on future product developments, remaining almost as tight-lipped in the face of speculation as Amstrad. One clear direction in which Apple may choose to move in the near future, however, is into the portable market – a growing sector which is dominated by IBM PC compatible machines.

The launch of Apple's portable last year was greeted with significant interest, but the machine itself turned out to be more of a luggable than a true portable. The price of the Apple portable is also pitched at a level that many people may have made the decision of buying between a portable or a desktop Mac, rather than a portable to supplement their deskbound machine.

•The Outbound laptop. Will this become the next Apple portable?

Apple's Chairman, John Sculley, has already publicly stated that Apple is currently developing notebook-sized computers. "Miniaturisation," he said, "is one of the major themes we are focusing on in research and development. I think that's going to be extremely important in the 1990s".

Apparently acknowledging criticism about Apple's failure to come up with a lightweight portable, Sculley went on to tell Associated Press that Apple "can do a lot more than just catch up. We see this as a chance to get real differentiation in the 1990s."

Rumours suggest that Apple may be considering partnerships with Japanese electronics companies in an attempt to develop cheaper products – and Sony may well be negotiating with Apple to develop a new laptop.

Another partnership may well be in the offing for Apple – with American manufacturer Outbound Systems.

Outbound launched a laptop computer that offers Mac Plus or SE owners portability in an innovative way. Users remove the ROMs from their Mac, install them in the Outbound Laptop and use it as a portable – which can be 'docked' with the ROM-less host when the user wants the full facilities offered by a desktop machine.

Unusually, Apple has taken no action against Outbound. Indeed, the company appears to have signed but not disclosed the contents of a 'licence agreement' with Outbound Systems. This is an unprecedented move for Apple, which may indicate that it is considering 'adopting' or adapting the Outbound laptop for the official Mac range.

Busting Windows on the PC

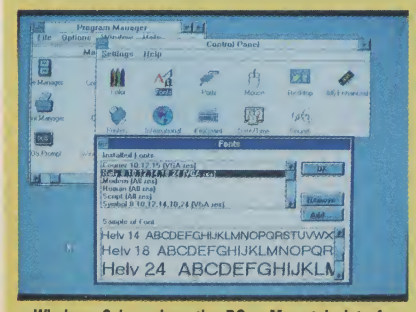
According to the American publication MacWeek, Apple conducted benchmark tests on the Classic and IIsi, pitting them against comparable IBM PC compatibles. Apparently, both Apple machines were shown to outperform PCs from the IBM and Compaq range that profess to offer a similar power-to-price ratio.

The Classic performed 'significantly better' than some PCs, running Windows 3.0 on a 10Mhz Intel 80286. Running un-named software packages, the IIsi also outperformed 386-based PCs.

Clearly, Apple is now pitching the Macintosh firmly against the IBM PC and compatibles – the new power-to-price ratio offered by the Classic and IIsi, coupled by the recently announced fall in the price of the Mac IIci – make the Mac range an attractive and financially viable alternative to the PC.

Previously, the pricing structure for the Mac made it an expensive, if user friendly, option to the PC. The advent of Windows 3.0 allows the PC to offer a more serious challenge to Apple's user-friendly WIMP interface than GEM or earlier versions of Windows. Windows 3.0, combined with continuing delays in Apple's new System 7 operating system, means that Apple is losing some of the edge it gained over the PC with its user interface.

By maintaining high prices, Apple has secured high margins for itself since the launch of the Macintosh range, but has lost out in terms of sales volume. Currently, Apple has around 9 per cent of the worldwide market for personal computers – a share which the company is very keen to increase.



• Windows 3 has given the PC a Mac-style interface and firmly established WIMPS front-ends as standard.

"The basic goal is to gain market share," Apple Chairman John Sculley explained. "We need to get unit growth up, so we are going to take lower margins."

The price cut may have the desired result in America, where Apple products, like PCs, are sold in the 'open' market place – traders compete on price to attract customers, offering as much as 20 per cent discount.

In the UK and Europe, however, the picture is different and taking lower margins may not have the same impact – Apple only sells through authorised Apple Centres which are effectively Apple franchises. The only price competition comes from so-called 'grey importers' who ship in products from the USA or Canada and undercut Apple's list prices.

Clearly, the Mac and the PC are continuing to move closer together – with Windows, the PC gained a more user-friendly interface, and with the new machines Apple is more able to compete on price with the PC and clone market.

And the move towards a 'common' Mac/PC platform is continuing – all new Macs can now read and write PC format disks, and Apple is working with Microsoft on both TrueType and PostScript-compatible printers that will facilitate the transfer of documents between platforms. Indeed, the recently-announced Standard Entity Rendering Interchange Format (SERIF) will allow users to prepare a document in PageMaker on the PC, then port it to the Mac and complete the design and pagination in XPress.

While it can be argued that it's still tricky to network Macs and PCs together, the fact that major packages such as Wingz, Excel, XPress, and PageMaker are, or soon will be, running as happily on a PC as a Mac, the difference between owning a Mac and a PC will be much smaller – unless System 7 can widen the gap once more.

Trio of 'affordable' machines j

SMALL MA
Apple shake

● The Mac Plus is no more, but three new machines arrive: the Classic, IILC and IIsi

Three new members of the Macintosh family were launched by Apple on Monday and the bottom-of-the-range machine, the Mac Plus, was finally discontinued in favour of the Mac Classic. The entry point to the Mac range is now the 1Mb single floppy drive Classic, which has a list price of £660 inc VAT.

The launch, which also introduced the Mac LC and the Mac IIsi, took place simultaneously in several countries and sets Apple on a new course.

The move is seen as a clear indication that Apple intends to go head-on for the PC's share of the computer market, and also as a considered reaction to the arrival of Windows 3.0 and an increase in the PC's capacity as a user-friendly machine. Apple must also see the NeXT machine as a potential major rival in the battle for the desktop.

According to Clive Girling, Apple UK's Product Marketing Manager, the designers of the Classic were charged with the task of "taking all the good bits about the SE and building them into a lower cost solution". The specifications would indicate that the Classic is a little

Macs in Every Home and Off

The arrival of the new machines will clearly improve Apple's chances of penetrating the business market, but it may take a change in Apple's marketing strategy for the Mac to catch on as a 'home user' PC in the UK and Europe.

The Macintosh has achieved a clear market lead among publishing companies and the launches are likely to be well received. Without doubt, the IIsi offers more power for less cost than the IIcx – "which is good news," as Ben Taylor, Future Publishing's system manager said. "I'll reserve judgement on the LC until I've seen one, but it's likely to be the machine I'll specify in place of the SE30 – the larger screen offers a distinct advantage, and colour is a bonus."

Outside the publishing environment, the LC may be less well received by businesses – while it brings down the price of an SE-equivalent Mac, the LC doesn't offer a NuBus slot and will not be able to handle the virtual memory management that promises to be one of the keystones of the new System 7 operating system.

The IIsi is likely to become the basic business machine – technically, it

s iSin the Apple Mac range

AC TO GO... kes up range

slower than the SE, but achieves a 25 per cent increase on the speed of the Plus which it replaces. Supplied with a SuperDrive (like all machines now shipped by Apple) the Classic will be offered in two configurations – with 1Mb of memory and a SuperDrive for £660, or with 2Mb of memory, a SuperDrive and a 20Mb hard disk for £1030.

The LC – which should not be considered as part of the Macintosh II family according to Apple – is apparently mid-way between the Classic and the current Mac IIcx in terms of performance. It will ship early next year in volume in one configuration only: 2Mb/20 – 2Mb memory and a 20Mb hard drive. With a colour monitor that offers 256 colours on screen, the LC will cost £1720; with a mono monitor, £1580 and without a monitor, £1420.

The Mac IIsi offers performance comparable to that of the Mac IIcx and has the same on-board video capabilities as the IIci. The IIsi ships in three configurations: 2Mb/40 for £2639, 5Mb/40 for £3041 and 5Mb/80 for £3444. A colour 13" monitor costs £684. For £138 a 68882 maths co-processor can be added as part of an adaptor that allows one NuBus card to be fitted inside the casing.

nd Office?

does not replace the IIcx, which Apple plans to continue making. "We'll let customers tell us when they don't want a IIcx any more," Apple UK's Product Marketing Manager, Clive Girling, explained. "Some people may want the extra slots, while large organisations may be locked into the IIcx as an authorised purchase option for the time being".

However, the way that Apple sells its machine in the UK and Europe may keep the Mac from being a serious contender in the home market, despite the move on prices. Only authorised Apple Centres can sell Mac equipment – and Apple Centres can only quote the list price in advertising, although they do have some room to manoeuvre on price when they are speaking direct to a customer. In the USA, it is not difficult to secure a 15-20 per cent discount on list by shopping around, but in the UK only journalists, charities and educational users can buy from Apple at less than list price.

Should the Classic, LC and IIsi find their way into High Street multiples such as Dixons, however, the Mac could really catch on outside the workplace.

End of the Clones?

The aggressively low pricing of the Classic – pitched at £660 for the IMb single floppy version and £1030 for the 2Mb/40Mb hard drive machine – could put paid to the market in Macintosh emulators such as Spectre GCR for the ST or AMax for the Amiga.

If you own a 500K Amiga or ST and plan to emulate a Mac, you could end up with a bill for £1,150 or £800 respectively if you need to buy a 20Mb drive, mono monitor, 500K memory upgrade and the emulator.

Emulation, with all the potential pitfalls of incompatibility and less than complete functionality, is no longer a viable route to owning and running a Mac, given the new low entry price to the Macintosh range.

And there will be the problem of acquiring a Mac ROM to fit into the emulating hardware, and even that has been made more difficult by the recent arrest in America of an Apple ROM counterfeiter who was, by all accounts, a major supplier...

The three Macintoshes

THE MACINTOSH CLASSIC

- 68000 processor, running at 7.83MHz.
- Memory expandable to 4Mb.
- 1.44Mb floppy disk 'SuperDrive' fitted as standard.
- Available with built-in 40Mb hard disk drive.
- Built-in 9" high-resolution monochrome display.
- All 'standard' Apple ports – ADB, SCSI, printer and modem ports, external floppy disk port, audio out socket.
- Available immediately 'in volume'

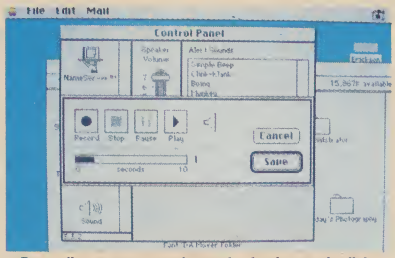
THE MACINTOSH LC

- 68020 processor, running at 16Mhz.
- Memory expandable to 10Mb.
- 1.44Mb floppy disk 'SuperDrive' fitted as standard.
- Compatible with new Apple 12" monitor (the new colour display offers 256 colours or sixteen grey levels; while the new mono display offers 16 grey levels only) and 13" monitor (which offers 16 colours on the LC).
- Sold with 40Mb hard disk drive as standard.
- All 'standard' Apple ports, plus sound input, which comes with Apple microphone.
- Not available immediately - due to ship 'in volume' early next year

THE MACINTOSH IIsi

- 68030 processor, running at 20Mhz. Optional 68882 maths co-processor available.
- Memory expandable to 17Mb.
- 1.44Mb floppy disk 'SuperDrive' fitted as standard.
- Can drive the full range of Apple monitors, offering the same video capabilities at the Mac IIci
- Sold with 40Mb or 80Mb hard disk and in three memory configurations.
- All 'standard' Apple ports, plus sound input, which comes with Apple microphone.
- Can accommodate one Apple NuBus board via an internally-fitted adaptor card
- Available immediately 'in volume

Sound - a new dimension



• *Recording a ten-second snatch of noise on the IIsi*

Both the LC and IIsi are supplied with a microphone as standard. Apple is not entirely sure how sound will be utilised by developers, but at the very least you can use the mike to record speech or sounds and send audio messages with documents dispatched to another Mac by electronic mail.

These new machines come with the Macintosh Audio Compression Expansion (MACE) utility that supports 3:1 or 6:1 compression - so up to three hours of sound can be packed into 40Mb of hard disk space.

A new, regular Mac column starts on page 31

Biggles in Space

• *Wing Commander: deep space*

Playing *Wing Commander* will not be so much a case of, "Chocks away, Ginger," as "Photon torpedoes primed, Captain."

The latest game from Mindscape for the PC places you in deep space, at the controls of a spaceship cockpit which makes Concorde look like a washing machine. Combing elements of space exploration with more traditional 'shoot-'em-up' action, the game has 35 missions to be successfully completed. Mindscape also promises some "extremely cinematic graphics."

Released on October 25 at a price of £34.99, ST and Amiga versions should follow early next year.

Mouse talk

• *Tracey: fast draw*

Look carefully at this picture of a mouse. See that lens stuck on the end? That's a new device which could help you trace pictures onto your computer.

It's called Tracey and costs £7.95, manufacturer Sidewise reckons that it's a snip.

"It's ideally suited to work with any computer that uses a mouse," said boss Simon Williams. "With Tracey you have a low-cost base level digitising tool at a tiny fraction of the cost of a graphics tablet. I'm convinced it's a break-through in graphic computing."

Tracey can be attached to either side of a mouse and, naturally, it works with any paint or drawing package. See your dealer.

Phone book goes on-line and CD

To soften the blow of the soon to be introduced 43.5p charge for a call to directory enquiries, BT is to launch two new computer-based directory services for businesses next March.

Phone Base, will give subscribers direct access to BT's public directory database housed in Sheffield from computer terminals on their desks. Essentially, it will act as a giant comms service or bulletin board.

And Phone Disc is an electronic version of the phone books with the information stored on a CD.

Both systems offer access to all 17 million numbers currently in BT's phone books - ex-directory numbers will still be excluded. Whereas the information on Phone Base will be constantly modified subscribers to Phone Disc will receive an updated CD once a quarter. Both also allow a visual check on spelling of names and addresses and give the postcodes, which directory enquiries did not.

Phone Base is aimed at smaller business and there will be no charge for installation or rental, but calls will be charged at a rate of 6p per minute cheap rate and 13p per minute peak. The subscriber will receive a password and a telephone number to get into the database, but will need to have a compatible PC or visual display unit to view the information..

At an annual cost of £2,200, Phone Disc is geared for businesses making over 300 number enquiries a week. On subscribing, companies will receive the latest CD plus the software required to access the data. Again the users will have to provide their own PC.

• *Phone Disc: but it doesn't prop up that wonky table quite as well.*

UK hacker in video nasty sensation

Britain's most notorious hacker Edward Singh has been arrested and charged with deception after admitting to breaking into the Ritz Video chainstore's computer system.

Singh was picked up two weeks ago by the Sutton CID after his revelations to a computer trade newspaper of the break-in. He gave *Computing* magazine comprehensive details of his hacking exploits.

However, he hasn't been arrested under the newly enforced Computer Misuse Act, because the hack was performed before the Act came into force. Police moved in following a complaint by the 800 strong Ritz Video chain.

The hacking community has been buzzing since Singh's revelations. One anonymous hacker called *Express* three weeks ago claiming that he had penetrated the system. The London based man, calling himself Peter Right (sic), alleged that the system was easier to break than any he had ever encountered. He also claimed that it would have been simple to corrupt the company's files, although Right stressed that his motivation was purely academic.

• *Singh: deception charge*

Singh said he had broken into the system only to highlight its security flaws – and the damage that could have been done by a cyber-nut.

Two years ago Singh made the headlines after hacking into British and US defence computers. He said his intention was to expose the insecure data problem and despite an investigation by the Serious Fraud Squad, no charges were brought against him.

Since then Singh has avoided the limelight; after his 'war secrets' hack he complained of harrassment from "the sensationalist press". He is due to appear at Sutton Magistrates Court on 22 October, and will plead not guilty.

Cyber mag launched

A new mail-out magazine purporting to take up a cyberpunk theme has been launched in the UK.

NRG comes from mail order and publishing specialist, Special Reserve, which is also responsible for adventure games magazine *Confidential*. The 24-page "cyberzine" will be mailed out to the club's 30,000 members – it costs £6 per year to join.

The mag's cyber theme doesn't go much further than the page headings. The mag features the usual games reviews (Shockware), charts (Critical Media) and letters (Jack-In-And-Flip-Out) and there's the obligatory weird mix and match of typefaces.

Comparisons with the magnificant Californian cyber mag *Mondo 2000* should not be made.

Special Reserve are on 0279 600204.

Bubble bubble

Believe it or not, the super-large shot of the racing car was produced by a new bubble jet printer.

Canon's latest offering is the first ever A1 bubble jet making it the largest in the world.

It can manage 400 dots per inch and weighs half a ton. No price has been fixed, but we're probably talking five figures.

Sega joins Big Blue for PC games machine

IT'S THE IBM CONSOLE!

Sega will launch a low cost IBM compatible PC next year; extraordinarily it will boast Megadrive compatibility.

The Japanese console and arcade machine manufacturer has teamed up with IBM Japan to supply a low cost AT. It will be aimed at buyers who want arcade quality games as well as access to serious IBM compatible software.

The 16-bit Megadrive, only launched in the UK last month, has proved to be a massive success in Japan. Already the console has broken Nintendo's grip of the games machine market in the Far East.

Sega will definitely be launching the machine in Britain next year. Industry sources say the UK computer trade is keen to introduce the hybrid at the earliest possible opportunity. However, last week no-one at Sega UK nor its main distributor – Virgin Games – was prepared to comment.

Virgin Games boss Nick Alexander restricted himself to: "If it is happening, and I'm not saying if it is or isn't, then it sounds like a good idea."

Japanese reports insist that the machine will come with an IBM motherboard. It will sport an AT style bus and 512K RAM. Buyers will be able to plug the machine straight into their television sets, and a special adaptor will be included to make Megadrive games run.

Prices in Japan are expected to start at about 200,000 yen and Sega is hoping to introduce the machine here for something in the region of £799. A Megadrive game, and possibly some serious business software, is likely to be included.

The long-awaited Megadrive CD-ROM drive will be one option open to gamers. It gives players access to some of the finest graphics on any home computer system and it will also be available to normal Megadrive owners; no UK price has been fixed.

• *Megadrive: PC version in the spring.*

In the past two years Sega has asserted itself as Europe's front runner in the console stakes. The original Master System has clocked up sales of 250,000 in the UK and confidence is high for the Megadrive.

Last week Virgin Games upped its 1990 predictions for the Megadrive by 10,000 and the firm reckons on a user base of 40,000 by the end of this year. There are currently 17 games available for the console – that figure will be closer to 30 when the Sega PC arrives. ■

Apocalypse Now

A world on the brink of thermonuclear warfare provides the background for *The Final Conflict*, the latest offering from Impressions.

Available from the end of October for the ST and Amiga, with a PC version following in November, the game casts the player as the premier of a country of their choice.

But to win requires more than just blowing up your enemies. The game also demands diplomatic skills and careful management of resources. So now you can be Maggie or George for just £24.99. ■

• *The Final Confict: fun with the state-of-the-art in thermonuclear technology*

Worms come clean

• *Worms: even smarter than an Archimedes*

Earthworms are helping scientists develop the next generation of computers.

Japanese high-tech giant NEC has been piecing together a cell structure of the C Elegan worm's brain. They want to unravel a complete genetic 'wiring' system, which could be put to use in Artificial Intelligence.

Project leader Dr Ken-Ichiro Higashi, believes the mechanisms used in the worm's brain which recognises objects could be transferred to computers. ■

• *McLaren: taking store*

Talking shop

You could be forgiven for thinking that there's nothing particularly special about the opening of a new computer shop in Dundee. Except that this particular store is just a bit different from your run-of-the-mill hardware and software emporium.

It has been set up by an enterprising 17-year-old chap, whose main motivation is a love of computers (and a desire to make a living).

Scott McLaren decided to open his own shop when he realised that none of the outlets in his area catered for home computer users. His original plan was to start up a mail-order company, but when he saw a premises up for let, he decided to go the whole hog.

Bits and Bytes Dundee opened last Saturday with stocks worth £12,000 – funds were raised privately.

McLaren told *Express*: "I've been interested in computers since I was given a Vic 20 at the age of eight. I think my enthusiasm for the subject will help me communicate with customers. It's more than likely that I like the same things that they like. That's much better than talking to a 40-year-old with no love for computers.

"I haven't really got any background in the computer industry. It's pretty hard to have any background at all when you're 17."

But the Dundee born entrepreneur also reckons he's got the business acumen to cut it with more experienced business people. ■

Gameboy basher

Details of a Nintendo Gameboy basher, due to be launched later this year, have reached *Express*.

We understand the machine is to be called Game Mate. Joystick manufacturer Cheetah will be importing the £59 machine into the UK from an unknown source in Taiwan, it should be arriving next month.

It features a horizontal screen - which is a half inch bigger than that of the Nintendo machine. Full details next week. ■

SPECIAL NIBBLES

Viruses have become a fixture of the computing world, but this doesn't mean that the first time you find out about them is when they hit you. Nibbles brings you the latest now.

- The alleged creator of several Macintosh viruses including *MDEF*, *CDEF* and *MDEFB* has finally been nicked. The unnamed man has been identified as a student at New York's Ithaca High School. However, the local authorities do not want to prosecute – they say this is because the chappie has co-operated with them.
- It's not just Mac owners who are aware of the threat of infection; PC owners are often at the mercy of the evil doer. They should look out for the 9k sized *Whale AKA Motherfish* virus. This is the first 'armoured' virus known. Heavy duty and complex.
- Norton's Anti-Virus took a drubbing at the recent PC Business Show. Norton challenged people to bring infected disks to be examined. One such disk containing several notorious viruses was passed as clean. One which slipped past what was supposed to be "the most complete virus protection utility on the market" was the worryingly named Amstrad virus. Trouble is, no-one is quite sure what it can do.
- The centre of virus production appears to be Indonesia at the moment. Several new Indonesian digital diseases have been spotted recently. They are: *Freddy* which infects IBMBIO.COM, *Arema a Den Zuk* variant, *Hacker* - very much like *Ohio*, and *Supernova* which will trash a disk when the printer is in use.

Computer perjury?

Computers are too unreliable to be used as evidence in court cases, according to Mark Tantam, a computer expert formerly with the Serious Crime Squad.

At a conference on computer security last week, Tantem called for the rules governing the use of computers in court to be amended to take account of the fact that they cannot be presumed to work reliably. He believes that computers "often work in totally irrational ways that nobody can fathom."

His argument is based on current rules which only require proof that a print-out is reliable when there has been human intervention. Tantem says this presumes that the equipment was working correctly when no human operator was involved.

As a result, a computer print-out which is incorrect can be used in evidence, and the producer of the print-out is under no obligation whatsoever to let the court know.

• The thought of a Mac in a tutu might not be everybody's idea of a turn on, but ballet dancers could soon find their steps are being worked out by a new breed of choreographer.

The One Extra Dance Company in Sydney, Australia, has enlisted a Mac to help compose and record dance presentations for professional performances.

The piece on which the electronic maestro is working at the moment is particularly apt, as the Iliac Suite was composed in 1957 on a primitive mainframe, the Iliac computer.

Atari on the rails

If you own an Atari machine you're probably thinking it's about time you caught up with what the company is up to. Atari, in its unfathomable wisdom, decided to give the Computer Entertainment Show and Business Computing '90 a miss, leaving all the glory to others at these fine events.

Still, you can check out the latest developments, talk to the hardware techies and the software bods on the Atari "Whistle Stop Tour 1990" this month.

It's being held on a train which will be stopping at six major railway stations around the country. Here's the dates:

October 23: Bristol Temple Meads; 24: Manchester Victoria; 25: Leeds; 26: Newcastle; 27: Glasgow Central; 29: Birmingham International

Visitors to the Bristol date will be able to talk to a babble of *Express* writers who have been invited along. Other companies planning to show up include Mirrorsoft, Microdeal and Third Coast Technologies.

The train won't be stopping in London. An Atari spokeswoman explained: "We already staged the Atari Show in London last June. The idea of the tour is to see the people who find it difficult to get to London. We want to get out there rather than wait for people to come and see us."

Plans are afoot for another Atari show next year, although nothing has been confirmed.

Year end profits signal start of a new era

AMSTRAD SLIPS 43 PER CENT

Amstrad finally, reluctantly, resigned itself to the realities of middle age last week, after announcing a 43 per cent drop in profits for the year ending June 30 1990. Profits have dropped by 75 per cent since the company's youthful heyday of 1988.

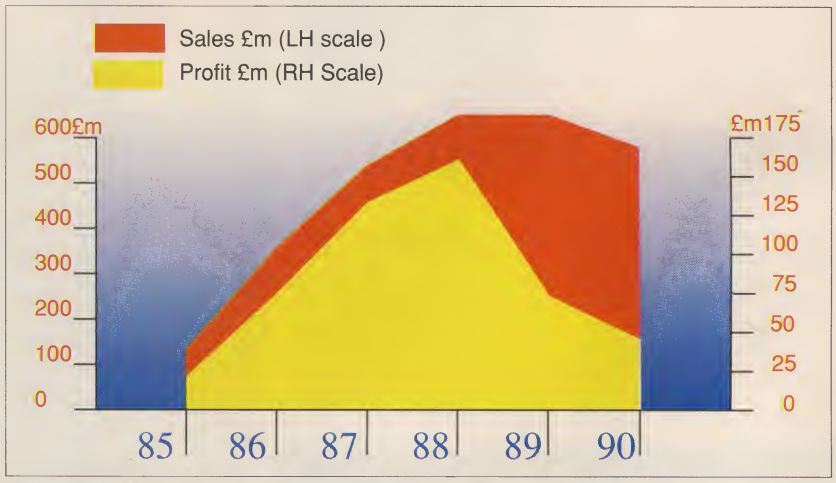
The firm's reliance on the computer industry has waned considerably over the past year. In its last fiscal year Amstrad clocked up £347.4 million in computer sales – compared to £447.7 million in 1989. Computers make up 60 per cent of Amstrad's turnover – in 1989 it was 70 per cent.

Profits were down from £76.6 million and turnover dipped 7.8 per cent from £626.3 million to £577.3 million.

Nevertheless, the City is viewing the results as a natural settling period. Last Thursday the broadsheet business pages and the Financial Times applauded the company on its performance through "these tough times". Amazingly, the company's share price held steady all through the end of last week, signalling City confidence.

When profits dropped by 50 per cent in 1989 the press could hardly contain its glee, and share prices dived disturbingly.

The papers also dwelt on the inevitability of a sales slide. Techniques which served Amstrad well in the mid-1980s have not been ignored by competitors. And the business computer industry is not growing at anything near the rate of 1986-87.



• Up and down: Amstrad's sales and profits since it entered the computer industry. Since 1985 there's been the Spectrum buy-out, the CPC, PCW, PC1512, 1640 and PC portables. The company's also had the less impressive PC200 and 2000 series.

In the past year the company has managed to wipe out a nasty bank debt of over £100 million, and it has re-evaluated the worth of its stake in the loss making US chip manufacturer Micron.

Astute boss Alan Sugar still retains 44 per cent of Amstrad, which he set up in the late '60s.

As promised, Amstrad managed to stick to an ambitious product introduction schedule. This year we have seen the Generation 3000 series of professional computers, the new range of high performance portables, the upgraded CPC home computers and the low-cost CPC console. All have been received warmly. The product launches of 1988-89 included the ill-fated PC200 machine and the oft-scorned 2000 series.

There have also been fax machines and the 'Double Decker' video recorder. Sales of satellite dishes have increased three fold with exports rising on the continent.

In the company statement. Alan Sugar refrained from some of his more outrageous predictions, preferring to accept a "realistic view" of the market. He said: "Realistically we cannot ignore the current economic climate and I just hope that there is no further deterioration which would have a severe impact on our business."

He stressed the importance of having new products but promised nothing specific.

Atari: no guarantee of third party drive compatibility

STE HARD DISKS UNDER THREAT

• STE: hard times

By Dave Golder and Andrew Hutchinson

Atari's upgrade to the ST, the STE, has once again run into trouble.

The firm has admitted that some STEs may be incompatible with hard drives owing to a faulty DMA chip; but Atari is (as usual) reluctant to reveal the extent of the problem.

It has emerged that extended use of the faulty DMA chip may corrupt information on a hard drive after three or four hours. Atari has agreed to repair faulty STEs to make them compatible with Atari hard drives, but it offers no guarantee of compatibility with third-party drives.

Atari appears to be playing down the problem even though it has been aware of the situation for some time. Despite sending out a confidential report (ST/HW/00070) informing dealers of the problem, Atari has decided against recalling faulty STEs.

A spokesman for Atari said that the company is "more than satisfied" with the situation and stressed that it is "only a small batch of STEs which were affected." Atari says that all STEs shipped in the last three months feature the new redesigned DMA chip.

But suppliers are telling a different story. Hard disk manufacturer, Gasteiner, estimates that as many as half of its stock of STEs has the fault. And when Paul Glover of the influential ST Club contacted his supplier about the trouble he was having with his hard disk, he was told that up to 30 per cent of some batches of the STE were faulty.

Last Christmas the STE was experiencing compatibility problems when some software would not run on the machine. Then, Atari laid the blame at the door of overly-adventurous programmers, but this time it appears that Atari itself is at fault.

Atari's message for anyone with a faulty STE and third-party hard drive is: "While we are sympathetic to the problem, we are not in a position to help at this stage." Hard drive buyers should consult their dealers.

999 blunder costs capital millions

More than £13 million and six years' work have been thrown down the drain by the London ambulance service on a computer system which does not work.

It was designed to handle 999 calls, but has proven not only unreliable but also unable to handle the volume of emergency calls made in the capital.

The system is supposed to pinpoint which of London's ambulances is nearest to an emergency at any one time, but failed two major tests last month. Subjected to 800 calls in any one hour - a typical Saturday night - the system just could not cope.

Ambulance chiefs admit that there are still "teething troubles", but after six years it seems they have little choice other than to scrap the system and settle for an off-the-shelf solution.

China goes C64 crazy

The Chinese government has bought 10,000 Commodore 64 machines for use in administrative and educational establishments.

The order was placed with Commodore Australia which is now claiming the biggest single purchase of personal computers by volume. The deal was worth $20 million.

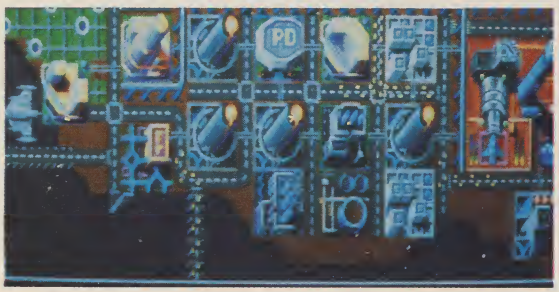
A spokesman for Commodore in the UK said: "The C64 is a great platform for all sorts of applications and it's especially useful in places like China."

The natives are revolting

Up those taxes, bulldoze that slum, whack in a police station, sprinkle on some grass and trees. You can paint the town any colour you please in Sim City, every megalomaniac's favourite wheeze.

But if you've tired of controlling the fate of the original towns you might be tempted to try two new graphics sets featuring six environments. *Sim City Architecture 1* could put you in the slippers of *Shogun* controlling hundreds of tiny Japanese villages, or there's a 'Medieval Times' option in which you live in the castle and everybody else doesn't. There's also the gold greedy Wild West complete with rattesnake and bad types who burn barns.

Sim City Architecture 2 features the total high-tech overload of New Town USA in the 21st Century, or you can allow for cultural preservation in Old Town Europe 22nd Century. The Infogrammes data disks are available on ST, Amiga, PC and Mac for £19.99.



• Sim City Future Europe: keep up with the real world.

By Royal appointment

If your hundredth birthday congratulatory letter from the Queen comes through your letterbox when you are still a sprightly 90, you could hear an excuse all too familiar in the modern world: "Sorry. Computer Error."

Buckingham Palace has finally given in to the technological revolution with the installation earlier this year of a fifteen workstation document image processing system based on UNIX. It's being used for the whole range of correspondence and administration carried out at the Palace.

Besides keeping track of hundredth birthday and Diamond Wedding messages, the system also produces the Court Circular, keeps detailed historical information on the Royals - including the Corgis - records a daily summary of press articles and deals with press requests for interviews and media arrangements at Royal engagements.

• Queen Liz – summoned computers to the Court.

CMG believes the system, with its two 300mb magnetic disk and two integrated one-gigabyte optical disk drives, to be pretty special.

Amazingly, the system has been installed since February – but due to security and training, the Palace had deemed it necessary to wait seven months before releasing the news.

Think it over

Astound your friends with amazing pearls of wisdom. Intrigue your colleagues with a deep understanding of the many ways of the world. Blow everybody's minds with the help of a new program for your PC – *Wisdom of the Ages*.

It's a selection of 6,500 thoughts made up by the great thinkers from history. Shakespeare, Aristotle, Freud, Confucious, and another 996 astute people have put in their penn'orth.

It comes from Micro Computer Resources in the US and costs $79. Contact 0101 800 767 6796.

THE WEEK IN VIEW

Much is voiced and written about the harmful effects of computers, especially on how they change children. Peter Walker, Atari UK's PR man, questions the reality of these charges.

Much ink has been spilt and heart searching done about whether computing is harmful to the young. 'Computers cause skin problems; computers cause anti-social behaviour; computers make kids hide away playing games; they become inarticulate; they become aggressive because of the violent nature of computer games. Computers turn kids into zombies, cause repetitive strain injuries.' And so on.

So what is the reality? Where is the evidence? Let us look at the charges one by one.

Adolescents had skin problems long before computers arrived. Kids have always tended to hide away doing some hobby, whether stamp collecting or playing with trains. They have a tendency to be either too articulate or too inarticulate and computers have not changed that. What's more, children have always had an aggressive tendency. After all, growing up is partly adding a veneer of civilisation over the natural animal tendencies of selfishness. Surely it is better to simulate aggression with a joystick than to throw stones at a dog, or tie tin cans to the tails of cats (pastimes of pre-computing children).

Getting rid of one's aggression is said to be healthy. Indeed Japanese employees are encouraged to hit punchballs resembling their bosses to get rid of aggression. It could be that playing aggressive games is healthy, not unhealthy. As for obsessional behaviour, it is not the prerogative of the young? The world is full of older folks playing bridge or bowls seven days a week and what about all those joggers and marathon runners? The truth is that people with obsessive natures need an outlet for that nature. Computing is a suitable outlet - it does not cause obsessive behaviour.

More On The Plus Side

What are the benefits of computing not already expounded? Firstly, art. The modern drawing program enables budding artists to test out his or her skills very quickly. Pictures can be modified at very high speed, and shading and other effects are trivial tasks. Secondly, many superb music programs exist which permit the rapid development of musical effects and even composition. Who knows how many budding composers will burst out of this musical egg? Creativity can be encouraged and developed, given the right tools. Computers can be great confidence builders.

Amongst all the keen players of computer games there will always be a few whose urge to experiment extends to actually programming their machine. Whether these skills, possibly enhanced by school study, lead to a career is not important. What matters is that logical thought processes are being encouraged, particularly if Top Down and structured programming is learned; the skills gained will be of great assistance when any large task is being planned.

A computer is like any piece of equipment put into the hands of a child, from a bicycle to a knife. Used wisely it is a valuable addition to the child's life; abused, it does damage.■

Express Access

Hey! Get in touch with us! *Express* is always on the look out for news leads and tip-offs – and we'll pay you for passing them on too!

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COMING NEXT THURSDAY

Lights, Computer, Action!
The *Express* guide to desktop video on your machine

Canon Colour
A look at the camera and copier king's software solutions for colour

PLUS

- Hot news
- Front End
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- The Console Zone
- Whole Wired World
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- Circuit City
- Express On-line
- Express Mail
- The PD Column
- Columns for: Amiga, Arc, CPC, C64, Macintosh,PC, Spectrum, ST

AND

Yes! That £2000 laser printer is still up for grabs!

AT A NEWSAGENT NEAR YOU ON 25th OCTOBER

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Commodore SCREEN GEMS

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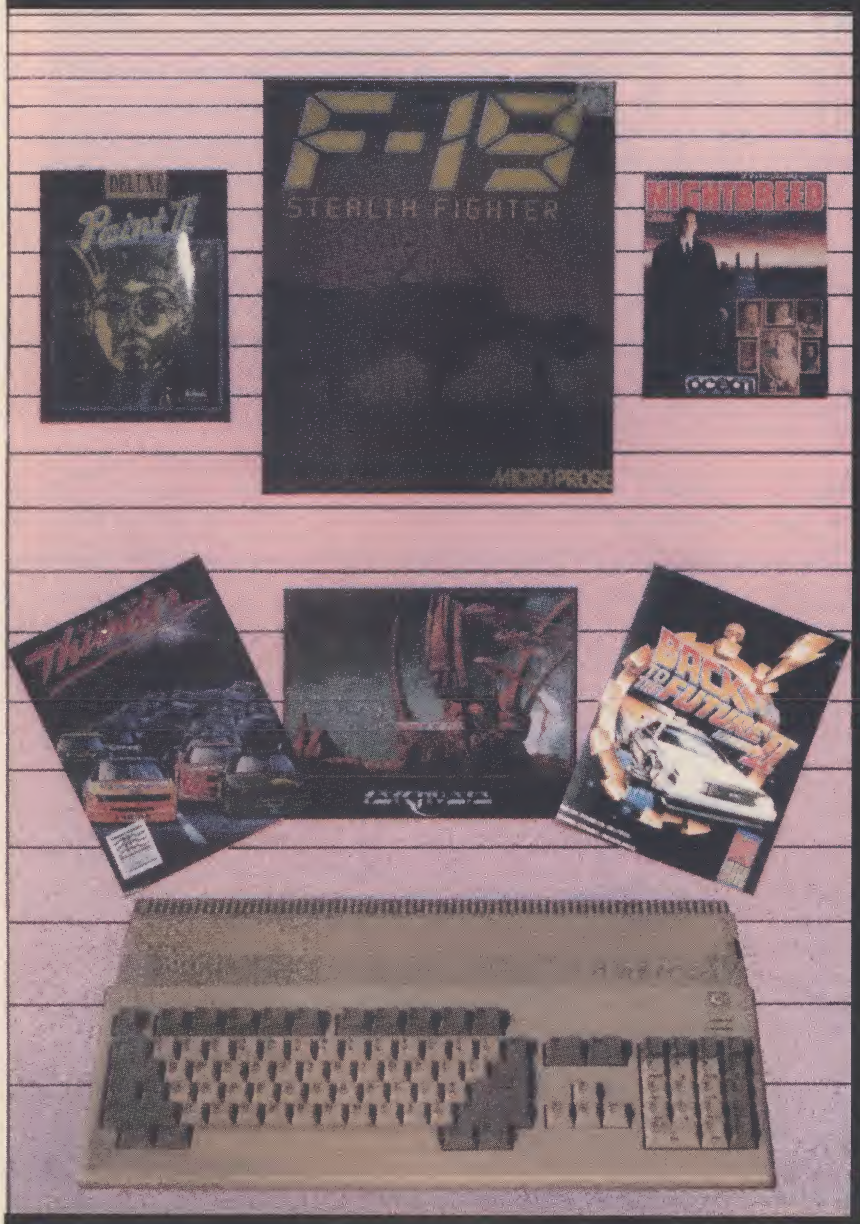

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Write and tell HFW what you think about anything under the Sun! Reach him at: *Express Mail, 30 Monmouth Street, Bath BA1 2BW.* Sorry, no personal replies, even with an SAE, as we're too busy writing the magazine.

■ No News?

Right. That's it. I've read enough complaints about the changes in your mag. First of all, there must be a good reason why you have stopped some of the columns – how on earth are you supposed to print any news about a certain machine when there is no news about that machine to print?

And no, I do not own an Amiga or ST – I just enjoy reading every column, no matter what machine. It might have helped if all those readers who complain about the column for 'their' machine being dropped sent something in for you to print about their machine – POKEs, fanzines, PD etc.

Anyway, I think the new-look NCE is brill – you get far more for your money, news from everywhere that's worth hearing, up-to-the-minute info and so on. Keep up the Brill work.

Jane Burman, Hutton Cranswick, Yorkshire

But we haven't abandoned the minority machine owners, you know. For instance, last week we brought MSX owners news of the MSX 3 machine and in glorious living colour too.

If something happens, you can rest assured that we'll let you all know...

H F-W

■ Woggle-Waver

I spotted your 'in depth' article on Scouts an computers and thought you may wish some more information.

The computer badge is not just available to Scouts – Guides and Brownies are also able to earn this badge. The work required to obtain it has nothing to do with games playing. The candidate must first write a minimum ten-line program using subroutines and branching loops and must also show a knowledge of the working parts of a computer and associated information storage devices.

Other uses of computers in Scouting are the same as in any other large organisation. I like to think I was one of the first to use computers in Scouting, as I would keep records of my Venture Scout Unit and Award Scheme on my ZX81! This was many years ago before the advent of the old rubber-keyed Spectrum.

At the recent national 'Go For A Million' camping weekend here in Plymouth we used a computer to keep track of the 750+ boys on the campsite. We also used radio and cellular phones!

I'll go out on a limb here and say that Scouting in the '90s is not just shorts and 'Ging Gang Goolie', but an organisation that strongly believes in the development of young people, and will use whatever technology is available to further and promote the aims of the Scout Association.

Dave Burns, Group Scout Leader, 1st Wembury Scout Group

PS Now that you are the ONLY weekly computer paper, you have quite a lot of expectations to fulfil. This cannot be done by alienating readers who are quite happy with equipment that you don't feel is worthy of a specific area any more. Could the fact that you were aware of Pop's imminent demise have had anything to do with your decision to drop these machines? Knowing that readers would have nowhere else to turn?

PPS I'm prepared to bet my woggle that this doesn't get printed.

I expect to receive your woggle by return, Dave. Send it to the usual address.

As for our motives in dropping some machine-specific columns, the views of the next correspondent sum the position up very succinctly. We had no idea that Pop was about to curl up and die when we planned the changes – we were just refining our product.

Thanks for the supplementary information on the Scouting movement, by the way. Our technical consultant on the story (who sourced the pic) was none less than Ian Wrigley, editor of the *1991 Scouting Annual* and ex-leading light of Scouting HQ no less. Ian works for one of our sister magazines, and I've asked the publisher to take his journalism badge away...

H F-W

■ Clean Names

A couple more additions to your list of unfortunate nomenclature. Alright, so they've got damn all to do with computers, but if you've got one or two spare fivers lying about you're welcome to print them.

The first concerns a new model of car launched in Mexico by Ford. After quantities of brain and thesaurus searching, the marketing people came up with the suitable-sounding name 'Caliente'. However, it was hurriedly changed to the unromantic S-22 when dealers informed the company that in Mexico, Caliente means 'street walker'

The other was perpetrated by General Motors (who trade as Vauxhall in this country) who put the Nova on the Mexican market without any alteration to the name. When reasons for the unusually low sales were sought, it was discovered somewhat to late that No-va in Mexico translates directly as 'won't go...'

By the way, if Protext 5 does have such a great spelling checker, how come Steve Carey's ST column in issue 98, supposedly entered using Protext, contains the word 'newsagenmts'? Surely you're not going to tell us that this is a real word used out of context?

Leigh Caldwell, Glasgow

Absolutely not, Leigh. but I am going to tell you that Steve Carey is a real person used out of context. Make of that what you will...

Seeing as your tales of names don't strictly adhere to the computer brief, I'll send you a single fiver before offering a few of my favourite unfortunate names. There's the hot chocolate drink you can find in French supermarkets that is

■ Bit Bopper?

My Amiga developed a fault after my little girl decided to pour orange juice inside it, so I decided to open it up and try to clean it. After I had completely taken it apart I was left with a pile of components on the table.

I decided to count the bits I had taken out. There appeared to be a lot more than the claimed 16 bits.

Maybe this will start a whole new argument about 'my 50 bit computer is better than your 45 bit', etc. If you were to take a hammer to it, you would end up with even more bits...

I wonder exactly what the record amount is?

R Archer, Hounslow, Middlesex

Oh dear! You could have started something dangerously expensive Mr Archer.

H F-W

• Could you bring yourself to smash up this good-looking Amiga just for the sake of counting the bits?

boldly labelled 'Bonky' (as in curling up in bed with a good book and a Bonky, no doubt); the unfortunately-named Danish sweeties that are called 'Sor-bits'; and the insensitively named Australian cheese by the name of 'Coon'.

Unless I get any more good computer-related names, let's consider this strand of correspondence closed.

H F-W

■ Villainy

With regard to your request for letters on the subject 'I saw a program doing this on a XXX computer, and it made me think how I could do this on my YYY computer'...

Recently, I saw an old re-run of *The Sweeney* in which Hywel Bennett guest starred as a computer hacker. At the climax of the programme, the young-looking Mr Bennett hacks into a company's computer and types the following command: 'Redirect Gold Bullion Lorry From Previous Instruction To Big Ramshackle Warehouse Down By The Docks.' (I can't promise that was exactly how the the command was, but that's as near as dammit.)

As soon as Hywel hit the ENTER key, the gold bullion lorry shown in the next shot suddenly changed direction and was heading for the empty warehouse in the Docklands where his heavy mob was lying in wait. (Of course, Regan and Carter tumbled the plot at the last minute and there was the usual Flying Squad mass brawl down by the docks before the villains were carted away leaving Regan to mumble 'He'll be out again in two years, bounced back on the streets with a slap on the wrist from some bleeding heart liberal judge', etc, etc.)

The point I'm trying to make is, how can I get a copy of the operating system that has such user-friendly commands. I'd dearly love to re-direct a gold bullion truck to my flat, but there's nothing on the market that could enable my Amiga to do that. Can anyone help?

Nick Booth, London

Well, it's not quite an operating system that you're looking for is it? More a criminal integrated package that can get the gold round to your house, allow you to tap into the world futures markets and dispose of the ill-gotten gains as a vast profit, then set up a spreadsheet to monitor the progress of your investments in a range of off-shore companies.

You know, the kind of package you find running on the dealer desk in any self-respecting City firm...

Nice idea, though, so I'll award you one of this week's fivers.

H F-W

■ Poor Programs

A plea to programmers everywhere: while you're perfecting your copper lists, filled vector routines, parallax scrolling etc, spare a thought for how sensibly your program is laid out. I've always imagined programmers to be a logical bunch, and yet so many programs are let down by silly and unnecessary quirks or oversights.

For example, why is it that *Stunt Car Racer* almost always needs two presses of the fire button to select any menu option... why does the time freeze in *Kick Off 2* almost every game, and surely Dino Dini doesn't expect me to score with a corner from my own end... As for bloody AmigaDos why does the line 'DELETE RAM:#?' try to delete everything BUT the contents of RAM unless RAM happens to be in the current directory?

Now don't get me wrong, I'm not saying that the above-mentioned software is crap. I wouldn't be without any of it. But I don't want to be bald by the age of 30!

The programmers will argue that deadlines often force them to release unperfected versions. Take *F29 Retaliator*, for instance, which is riddled with minor bugs. I get the impression that many software houses are more interested in successful marketing than in anything else.

But it can work against them in the end... Federation of Free Traders being a good case in point, and it certainly doesn't help their arguments against piracy. May I suggest that 'Annoyance' is rated alongside 'Playability' in reviews of software – and maybe then software houses will stop insulting the intelligence of their customers.

Stephen Ward, Norwich, Norfolk

The trouble with writing programs is that you can never take into account the potential stupidity of users – or the infinite number of ways in which an applications program might be used (or abused). Sure, software should be robust – I expect the copy of *XPress* I use to prepare these pages to behave itself impeccably, which by and large it does. But then I paid nearly £800 for the program, so have a right to expect quality. £25 might seem a very large amount of money to pay for an Amiga game, but in the wider scheme of software, it's a real bargain.

And the technical man on our sister title *Amiga Format* says you're being a plonker about that DELETE RAM command. He uses it all the time, without any problems. Maybe, sometimes, it's just you Stephen?

H F-W

■ Depressed

Since you reported that Amstrad is stopping the Spectrum +3 I have been in a state of depression. I am now going to have to save up for a new computer. I am sure this is what most owners will be thinking, but I can assure them they are not wrong.

Game producers may say they will keep producing software, but for how long? After this Christmas, I am sure most of the houses will stop Spectrum software and just concentrate on the 16-bit computers.

All right, the user groups will stay loyal, but that is only because they are specialised for the +3. I would like to see how many of the user groups that started recently (and therefore only have a few members and a couple of disks of software) will still support the Spectrum in a year's time.

I am going to stay a +3 user for now, only because I can't afford a 16-bit. But as soon as I can, then it's bye-bye +3.

However, I will say this has come a lot later than most people expected. People have been saying the Spectrum was finished when the first Atari 16-bits came out, but it has stayed near, if not at the top of the best-selling computer charts.

Oh, and I have written to B Mumford, answering his rather abusive letter.

A Price, Lewes, Sussex

Sounds like you're having a premature panic there Mr P. The Spectrum is far from dead – it's just the +3 that's being discontinued. Sort yourself out a device like the *Romantic Robot Multiface* and you'll be able to keep playing cassette games on your machine with the full convenience of a disk drive.

Software houses aren't going to give up writing and publishing games for the Spectrum – there are squillions of active users out there. My prediction is that there will still be Spectrum games charting NEXT Christmas.

You just don't know how lucky you are Mr Price – I wish there were half as many games for my Mac IIfx as there are for your Spectrum +3

H F-W

■ Good-Bye Then...

As a one-time Speccy owner, I read with great interest about the death of the +3 (may it now rest in peace). even more interesting was Robin Alway's comments on Amstrad's business practices.

My understanding of economics is that what companies like Amstrad do is to manage the resources of land, labour, capital and entrepreneurship. These together produce goods. No doubt the +3 was making Amstrad a profit, but the resources used to produce and market it can obviously be used in a better way to make the company even more profit.

If the company uses its resources more efficiently, it should be able to guarantee its own future success and the success of other products. In the long term, the termination of the +3 will be a good thing, as it will mean more support for Amstrad's other machines, and hopefully, new products.

It is always sad to see a good computer disappear. I can't think of anything more disheartening to +3 owners than to see their machine dropped (as a CPC owners, I know what that threat is like). But sometimes you have to sacrifice to make future gain.

Robert MacBean, Belfast

A sound appreciation of the principles of opportunity cost there Robert, and a fairly succinct appreciation of Amstrad's probably motivation.

MAIL SHORTS

■ Red Plot

...you mentioned in your news pages that Lotus has just won a court battle with several publishers over the look and feel of 1-2-3. I can't help feeling that Lotus have a similar policy to that of Nintendo... If Lotus and Nintendo were allowed to succeed in taking away our rights to chose the type of software we want, then we'd all be converts to communism.

C Andrews, London

Er. Well. Um. Don't quite see the gist of your McCarthyist argument I'm afraid Mr A.

H F-W

■ Hack Appeal

I've heard of the magazine 2600, but if you know of any others and where to get hold of them, I'd be very grateful.

Michael McLarnon

If anyone out there would like to send me a copy of 2600 or any similar publication I'd be most interested. And then I'll pass the details on to Michael

H F-W

■ Sean Spotter

...is the Sean Masterson, your C64 columnist, the same one who used to review for CCRAP 64? I think we should be told.

J Spencer, Brentwood

He is indeed, the very same. Only these days (after passing through a White Dwarf) he works full time on the new mag Commodore Format. If there are two things Sean knows about, one of them is the C64. (We don't talk about the other one.)

H F-W

■ Ego Trips

...following on from your story in Issue 98 I'd just like to say that I don't really care who it is who writes the games I play. Renegade's idea of making programmers into superstars is a silly idea as far as I am concerned. All it will do is attract the ego-merchants to sign with Renegade and we'll have to put up with trendy photos of byte-hounds on the packaging.

John Miles, Pershore, Worcs

I doubt we'll be seeing programmers in 'Game Videos' or on Channel 4 discussion programs for a while yet John. I shouldn't worry to much if I were you. Just keep playing the games and having fun...

.. H F-W

ULTIMATE AMIGAS

What hardware should you be looking at to tap the tremendous power lying dormant in your machine? Cade Roux makes some personal predictions for the shape of Amigas to come.

Amiga computers, the A500, A2000 and the new A3000, are certainly low-priced routes to a wide range of software applications, but the hardware platform they rest on has remained basically the same for the last five years. However, it now looks like the Amiga market is set for some rapid changes.

So, what will help or hinder the diverse Amiga family in the 90s? What upgrades are available for current Amigas to boost their performance? What can we learn from the PC arena, where programs cater for the lowest common denominator, and what of the future of Amigas on a PC-compatible planet? There are four main areas which require scrutiny:

Processing power is important for the increasingly sophisticated applications being made available to the Amiga user and memory and storage are also crucial to the multi-tasking environment of the future.

The increasingly popular UNIX operating system (OS) can clearly be considered as a future OS for the Amiga as it relies on a multitasking system.

Finally, graphics capabilities are growing across the computing board so there is a need to look at problems and solutions for the Amiga in that area.

Fortunately there are four areas in which the Amiga is already a force:

Music - the Amiga family already holds its own on this scene.

• *Music X – the best music program available on the Amiga.*

Business applications - the machines are already great for business applications, being productive and flexible at a compartively low cost.

Ethernet networking - Amigas offer perhaps the cheapest and most productive networks available.

Software support - with a base of PD software and excellent links with the UNIX and scientific community. Unfortunately though, the A1000 is left out of this analysis, as it is poorly supported for expansion hardware, especially by Commodore.

IN A NUTSHELL

A 1Mb dual-floppy Amiga system is common and plenty for most applications, but graphics, sound, and programming may require much more.

Existing Amiga owners should invest in memory, storage and processing power, if necessary. For new systems, there are three bases, the 500, the 2000, and the 3000.

For the most muscle and room for hard disks, an A2000 and the Great Valley Products' (GVP) 50Mhz upgrade is the only way to fly. For those requiring the Enhanced Chip Set (ECS) and 2Mb Chip in a cheaper box, a machine to replace the A500 (and 2000) is expected soon

The 3000 offers 32-bit speed, the ECS, and flicker fixer all in one box, with 1Mb Chip or 1Mb Fast RAM, expandable to 16Mb Fast or 2Mb Chip. It is not possible to match its features with any off-the-shelf expansion package.

Unfortunately, the 3000 is not the fastest Amiga, as there areboards available for A500s and 2000s which use the speedier 50MHz 68030 processors. If processing is a priority, then an A500 with a 50MHz 68030 CSA board and Static-RAM (SRAM) but without any extra ECS features is a low-cost solution.

THE 32-BIT PROCESS

The inception and then success of Motorola's range of 68000 processor chips in Macintosh, Atari and Amiga computing sent a message to soft and hardware manufacturers. It told them that graphics power would be the key to success in the low-end desktop market, which had previously been dominated by text-oriented PC-compatibles.

Time passes however, and the CPU (Central Processing Unit) of 68000-based has remained unchanged since 1985 and is slow by today's standards.

So, what does the Amiga family have going for it at the moment? And, more importantly, what of the future? The Amiga 500 and the 2000 both have 68000 chips and 16-bit data paths. The new A3000 has a 68030 and a 32-bit data path. The 2500, basically a 2000 with expansion cards already plugged in, only available in the States and some parts of Europe, has a 68020 or 68030. Most processor expansion boards also have 32-bit buses for memory.

For the unitiated, memory in the Amiga is divided into two areas; Chip RAM, which can be directly manipulated by the custom chip set (CCS), and Fast RAM, which can only be accessed by the CPU. So, where to go from here?

For a start, 32-bit memory is vital to an 68020 or 68030, as it allows Kickstart to be re-mapped to their increased speed. A good expansion route would be via a Great Valley Products' board. On GVP's boards, with Nibble-mode DRAM (Dynamic Random Access Memory) the 68030's burst mode is implemented, realising tremendous speed increases. With suitable RAM (Dynamic RAM or Static RAM), these boards allow the computer to fly along, without large losses of time for wait-states.

It should be pointed out here that problems exist with synchronous systems, those systems which are linked to the motherboard's clock, and genlocks. These can be eliminated with the newer 'asynchronous' boards.

A3000 owners are already a step ahead in the battle; their machines have 32-bit access to Chip RAM via the data-bus. This distances its CPU from some limitations of the Enhanced Chip Set (ECS), which will hold it back on occasion.

But even the A3000 can be boosted in processing power. Dave Haynie's SetCPU is probably the best way to ensure that the 68020 and 68030 will perform at their best. It detects processor type, re-maps Kickstart to 32-bit RAM and enables the 68030's caches. This can be useful for many games which don't take account of the CPU, alter their code, cause the cache copy, which is not altered, to be different and crash the machine (cause a Guru to the non-lamers among you). Floating point units, also known as math co-processors, such as the 68881 or faster 68882 can also be added for increased zip, but they will only be used when called directly or indirectly through libraries.

A point to bear in mind is, that with increased processing power, memory management will be part of future Amiga operating systems. It is probable that users will need an 68020 (with a separate Memory Management Unit) or a 68030 (which has integral MMU) to use new software.

MEMORY GAMES

A hard disk allows programs to be quickly accessible without having to be put in RAM, and keeps everything in one place.

Hard drives (or hard disks depending on how you say it)

• *The A590 standard hard drive for the Amiga 500.*

are a necessity in the Mac and PC markets; however they are still relatively expensive, and so less popular, for Amigas.

If an Amiga is used for a single function, adding RAM solves most problems, but when working with graphics and sound, it is good to have large and fast online storage space. 20Mb is too small and fills up rapidly. So, if you need a hard disk, a 40Mb drive is a better choice for Amigas running several applications.

• *Amiga graphics – ripe for progress.*

Drive speed is not too important, although Great Valley Products' (GVP) 68030 boards have built-in controllers which work on the 32-bit bus. Currently, Quantum drives are about the fastest available for the Amiga.

Future versions of the Amiga operating system (OS) will support virtual memory which will require hard disks to store program data when not needed. Other, more exotic storage devices can be useful, and CD-ROMs, WORM (Write Once, Read Many) drives, removable hard disks, and tape streamers are all available. [see the contacts panel for telephone numbers]

UNIX ON THE AMIGA

AmigaDOS is an efficient multi-tasking OS, but while it tries to act like a mainframe, its limited resources foil it. The next step is to look at a new OS; in my opinion, UNIX systems will figure strongly in the future of desktop computing.

Although we may have reached the point where a desktop micro can run UNIX, it is not comfortable within the limitations of most confined systems. UNIX is big and powerful, (it requires upwards of 4Mb to exist) with considerable initial overhead, but it comes into its own when large resources are being manipulated.

It's a twenty year old, multi-user, multi-tasking OS, perhaps in need of revision in the age of single-user multiple-processor desktop machines. Good news for us is that the newest AT&T UNIX, version 5.4, was first seen running on powerful Amigas. It is likely to be badged Amix and supplied with future Amigas.

A UNIX Graphic User Interface (GUIs) would have far more capabilities than AmigaDOS, but is yet untested on Amigas. So, if GUI's are your bag, a new version of AmigaDOS is the route. For this you should consider investing in the new Agnus, Denise and Kickstart, depending on your chosen applications. These will be necessary for using features of the latest Workbench (version 2.0) which still has advantages over other, non-multi-tasking systems.

GRAPHICS

In animation and graphics, the Amiga was for a long time king, having been integrated into video work since birth. Unhappily its graphics have not progressed since then. In fact, the visual capabilities on PCs and Macs have surpassed the Amiga. The Amiga Custom Chip Set is the heart, and also the weakness, of any Amiga, and although Agnus and Denise have great powers, they have nothing on VGA.

Problems lie mainly in the lack of high resolution colour displays and in the speed of operations, so any new chip set will need to be faster if it is to handle any larger and better screen modes.

The A3000 and Workbench 2.0 is the best combination to harness the bulk of the Enhanced Chip Set's strength. For your viewing pleasure a good mark to aim for is 1280x1024, a standard resolution for workstations. Frame buffers, or graphics cards, offer a way for specialist needs.

There is still no 256 colour Workbench to beat Microsoft Windows and this area is ripe for progress. Mimetics' frame buffer ($600), Amiga Centre Scotland's forthcoming board (under £1,000), and Black Belt Systems' HAM-E ($300) all offer improvements. The Caligari Broadcast ($2,000) supports Targa boards on a bridgeboard, but until Commodore makes a move, no significant standardisation will come about.

As we are always being told, standards are important. Just a glance at the many 3D modelling file standards reminds me of the MS-DOS minefield, and it can only be hoped that the example of the International File Format (IFF) standard's success holds out in graphics expansion.

With the extensive use of Amigas in video graphics, there is also hope that manufacturers will take notice of the gap in Amiga hardware for better display graphics for general applications. For example, a way to reconcile video with display graphics is via the new high definition video standard, HDTV which will provide a far higher resolution of computer images than the current NTSC/PAL TV standards. When fully developed this will inevitably influence the Amiga market.

Another hope for the graphic future is that more hardware will be accessible to Amigas running UNIX. Applications running under an X Window/Open Look GUI will also be able to use high-class transputer display controllers.

BEYOND THE PAST

The future for the Amiga, in the next two years at least, is rosy in business, music and entertainment. It is a versatile and productive machine which can adapt to your needs instead of forcing you to adapt to its.

Cheap PC visuals may force the Amiga out of low-cost graphics, as only UNIX and the associated hardware to accompany it look to overcome the Amiga's graphics limitations, albeit at some expense.

Amiga owners should look to the precedents and problems set in the PC world where the successes in building on the model of limited 8088 PCs were marred by the need to harness 386 power; along came incompatibilty problems. The spectre of incompatibility and loss of user base are weighty issues for the future Amiga, but the challenge of shrugging off restrictions will be taken up, as it has not been in the PC world, by small and independent-minded users. This will hold true even when the Amiga has past its peak.

My hope is for a Super-Amiga running UNIX (and Amiga/PC/Mac software in windows) with 24-bit graphics, a 32-bit chip set and no limits on Chip RAM. I expect that what are now considered powerful Amiga systems will take a back seat even to MS-DOS graphics systems. They could even fade out of graphics totally unless significant improvements to the display available for AmigaDOS software are made. However, I also expect that in five years that my Amiga will still be in use next to my true UNIX machine, minding its own business. ■

WHERE TO GO

I've mentioned the products, the firms and the prices, but how do you get into contact with the right people? Here's how:

Great Valley Products (GVP) 50MHz upgrade, A3001 series boards, 68030 boards: GVP products are available in the UK from Power Computing. Tel. 0234 273000.

**Solid State Leisure: A5000, 20-Card.
Tel: 0933 650677**

**Bytes & Pieces: For CSA, Ronin and Imtronics boards, and Commodore A2620 and A2630 boards.
Tel: 0253 734218**

**Calco Software: Quantum drives:
Tel 081-546 7256**

**Amiga Centre Scotland: for most Amiga needs.
Tel: 031 5574242**

UPGRADING THE A500, A2000 AND A3000

UPGRADE THE A500 IN PROCESSING SPEED

To upgrade the A500 processor, the 7MHz 68000 must be removed and replaced with one of greater speed, which again causes problems with games dependent on the cycles for timing. Because of hassle factor, the 68020 is the wiser upgrade choice in my opinion.

If you own an A500 and have some cash the throw around, the options are: the forthcoming A5000 from Solid State Leisure comes with a16MHz 68020, 1 to 4Mb DRAM, and up to 50MHz 6881 0r 882 math co-processor). Also from SSL is the 20-Card, again with a 68020 but with lower performance. You could try CSA cards, high speed 68030 with SRAM and up to 50MHz 6882 are available from Bytes & Pieces.

UPGRADE THE A2000 PROCESSOR

To upgrade a A2000 processor, a card is easily slotted into the motherboard's CPU slot. For those tricky games which rely on the 68000 clock, it may also be possible to revert to 68000 control with a disable switch.

The options for A2000 owners are: The outstanding GVP A3001 series boards available from Power Computing. These come with 68030 processors, 6882 co-processors, 0 (no on-board memory) 4 or 8Mb DRAM at 28, 33 and 50MHz respectively. They also have burst mode up to 33MHz and an onboard AT/IDE controller for two 40/80/200Mb hard drives. You could take a look at the CSA 68030 boards, Ronin and Imtronics boards, and Commodore A2620 and A2630 boards.

Great Valley Products offers an upgrade deal where they take CPU-slot boards for a new A3001. Their range represents the most mighty and solidly engineered of Amiga add-ons, out performing the others.

UPGRADE THE A3000 PROCESSOR

For A3000 owners, a 68040 board is on the cards, as are RISC boards. Both will allow the A3000 to compete with the power of an expanded A2000.
Some software may not be written with multiple Amiga processors in mind, but there will be no lack of raw Amiga computing power to match a 486 PC or a Mac II.

UK HOME COMPUTERS

PC/XT FOR UNDER £300

8088 Processor @ 8 MHz, Serial & Parallel Port. 8087 Socket.
1/2 Mb On-Board RAM (Expandable)
1X360k 5.25" FDD (Space for second)
Mono/Colour Graphics Card
2 Conventional Expansion Slots
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10 Pages per Minute
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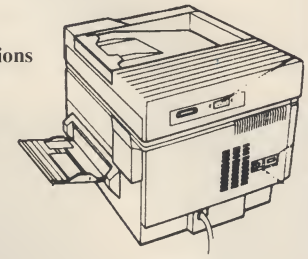
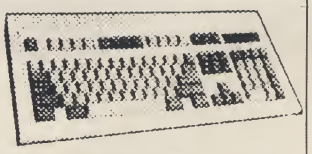
Parallel & Serial Interface
300X300 dots per inch
Landscape & Portrait Printing
Toner Cartridges from £18.00p
12 Month On-Site Warranty
Model:- Overture 110 +



£804.95p inc. VAT & Carriage

PC XT/AT KEYBOARDS



102-key keyboard made by EPSON. Full UK Spec. with 5 pin connector. Adjustable feet allow an elevated typing position. Self-sensing between XT or AT operation. Normally retailing at over £100.00p

£39.95p

Postage & Packing £4.05p

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Microsoft's WINDOWS 286, Ver 2.1. Full manuals, 5.25" disks. Brand New & unregistered. Currently selling for approximately £55.00p plus VAT.

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WINDOWS 386 Ver. 2.1

£49.95p plus £3.05 Postage

"FIRST FRAMEWORK"

Made by ASHTON-TATE. A Complete integrated package for the Amstrad PC 1512 or PC Compatibles. The package consists of a word-processor, database, spreadsheet, & graphics programs. System requirements are 2 5.25" disk drives & a minimum of 360k RAM. MS-DOS 2.0 or higher. This package is all that you would expect from a company like ASHTON-TATE.

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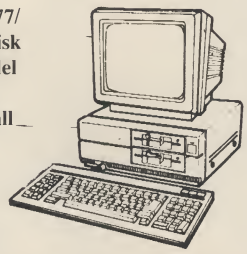
SAMSUNG PC/XT's

Model SPC 3000. 512k RAM (Expandable), Full-Size Keyboard, MS-DOS 3.2 & GW-BASIC. 4.77/8 MHz Clock Speed. Battery Back-Up. 5.25" Disk Drives, Hercules Display Card, RS232 & Parallel Ports, 8087 Co-Processor Socket, 90 Watt switched Power Supply, 4 Expansion Slots. Small Foot-Print. FREE Ex-Display Mono Monitor.



Single Disk Drive (512k)	£419.95p
Double Disk Drive(512k)	£449.95p
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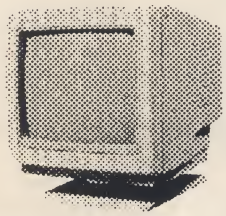
inc. VAT & Carriage

EX-DISPLAY MONITORS

Made by SAMSUNG. Condition as new. Tested prior to despatch. These monitors have generally had less than 10 hours use.



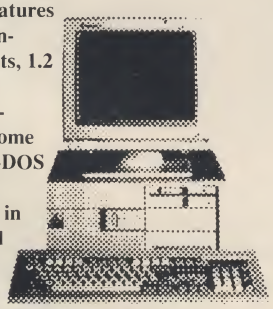
12" TTL Mono	£49.95p
12" VGA Black/White	£69.95p
14" CGA Colour	£99.95p
14" CGA/EGA Colour	£129.95p
14" VGA Colour	£169.95p
14" Multi-Synch Colour	£199.95p

Tilt & Swivel Base and Data cable included

The above prices include VAT, but please add £10.00p per monitor for overnight carriage.

PC/AT 286-OFFER 1

Made by SAMSUNG. Model MFC 6000/1. Usual selling price around £800.00p plus VAT. Features include 80286 processor @ 10MHz. 1Mb On-Board RAM (Expandable), 6 Expansion Slots, 1.2 Mb 5.25" High Density Floppy Disk Drive, (Room for 2 additional drives), 102 key keyboard, battery back-up, Hercules/Monochrome graphics Card, Serial & Parallel Ports, MS-DOS 3.2 & GW-BASIC. Ideal computer for the enthusiast who wants to add to their system in their own time. This item is very limited and cannot be repeated.



£499.95p This price includes VAT, but please add carriage £10.00p. (Note:- This offer doesn't include a monitor.)

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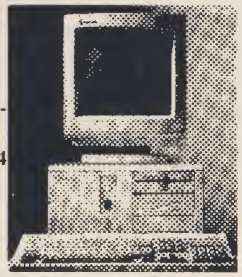

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Amiga

2000 + 500 = 1500?

I bet you're all pretty excited about the new Amiga 1500, right? It seems at last that Commodore has produced the machine that we've all been crying out for. But hang on there a minute, for there seems to be a darker side to Commodore's thinking. I can exclusively reveal that this brand spanking new machine is in actual fact an Amiga 2000! Yes folks, the Amiga 1500 is an Amiga 2000. No mistake about it. OK, it certainly seems to look like an Amiga 2000, but it can't be a 2000! Can it?

Well, according to several well known developers close to Commodore, the machine is identical to the existing Amiga B2000 model. Every chip, key, expansion slot and just about everything else is identical to the old faithful 2000. But why call it an Amiga 1500? Why not just drop the price of the real 2000? The answers to all these questions (and more) can now be revealed.

First, a question. Why do computer manufacturers slash prices on their machines? Answer – to sell as many as possible. But why, if Commodore is trying hard to push the A3000, is the 2000 getting such special treatment? Answer – because it's had its day. Yes folks, after little more than three years of existence, I can exclusively reveal (that is unless the news hounds on *Express* beat me to it) that the Amiga model 2000 is to face the chop. No one is sure when this will happen, but it seems almost certain that the day of reckoning is drawing near (early next year is the informed opinion).

With the impending release of the A500 Professional (complete with *ECS* and *Workbench 2.0*), Commodore seems to think that the 2000 is no longer needed. What will fill the resulting gap is unknown, but it is rumoured that Commodore may be considering a cut-down version of the 3000. But, as Commodore would say, this is nothing more than speculation and hype.

According to one developer in particular, when he spoke to several representatives of Commodore, they seemed to view the machine as something of a joke. When remarking on the fact that very little thought seemed to have been put into the machine, a CBM representative retorted "Rubbish! It took us at least a whole Saturday afternoon to draw the machine's badge!".

So is it worth buying the new(?) Amiga 1500? Well the machine may be up for the chop, but let's face it, the complete bundle consisting of the 1500 plus loadsa software is a damned good deal (a bargain, missus!). If it wasn't for the fact that I'm saving for an A3000, I'd buy one today!

THE CONSOLE QUESTION

Commodore may have just released its contender for the thriving games console market, but it seems that Commodore may still produce an Amiga-based games console. According to a source, Kelly Sumner (Commodore's European Sales Manager) let slip that the company had not ruled out the possibility of producing an Amiga-based games console along the same lines as the recently released C64GS. Unfortunately, Kelly went on to say that even if the machine was to be produced, it wouldn't happen for a long time yet (perhaps even years).

This is hardly surprising, as the release of a games console based around Amiga technology would be sure to steal sales from Commodore's soon to be released CDTV. Although the CDTV would still sell as a multimedia system for education and presentation etc, a vital chunk of the home market would be tempted away from CDTV in favour of the Amiga GS.

TETRIS BLOCKED!

It had to happen sooner or later. With all the PD versions of *Tetris* floating around the various libraries, it was only a matter of time before someone stepped in and put a stop to it all.

According to *PD News*, Spectrum Holobyte (who own the US rights to *Tetris*) has requested Fred Fish to remove all *Tetris* clones from his vast library of PD titles. To date, there are six different versions of *Tetris* within Fred's library, all of which will almost certainly have to be removed from circulation.

On the subject of risky PD, it seems that several libraries in the UK are distributing an eight channel *Sound Tracker*-like program called *Oktalyser*. According to GTI GmbH in West Germany, *Oktalyser* is a commercial product which sells for £35. The company has therefore requested that all libraries that distribute it withdraw it from circulation immediately. So there!

NEW O/S SOON

Feeling jealous of your friend with the A3000? I'm not surprised. Most of what their machine has to offer can also be bought for the existing range of Amigas; but there's still one thing that the A3000 has to offer that the others don't – Workbench *2.0*.

The good news is that you haven't got long to wait. According to sources close to Commodore, the company

plans to make OS version 2 available to the rest of us early next year. Now that Beta testing is virtually complete, it's only a matter of ironing out those last minute bugs.

Unlike previous OS upgrades, it seems certain that upgrading is going to be a fairly costly affair. Getting OS 2.0 up and running won't just be a case of buying a new Workbench disk – you're going to need both the ECS and the new 512K Kickstart ROM installed before you can start to take full advantage of what WB 2.0 has to offer. This will require you to send your machine off to a registered Commodore engineer who will undertake the necessary work.

So is it really worth upgrading to 2.0? Well, that depends entirely upon you. If you use your Amiga solely for playing games (which isn't necessarily a bad thing), then I'd advise you to stick with what you've already got. However, for the rest of us, Workbench2.0 and the Enhanced Chip Set is a recommended upgrade. Workbench 2.0 is just fantastic – after little more than a few hours use you'll never want to go back to 1.3

SPREADING THE WORD

Word processors can be jolly expensive things, but help is at hand with a new WP that will cost you little more than the price of a disk. Included on the latest batch of Fred Fish public domain disks is a PD word processor called *TextPlus*. Previously, the only program of this type that was available within the PD libraries was a rather quirky program called *WordWright*.

TextPlus is available within the 'New Home Business' and 'HomeManagement' PD packs available from that well respected supplier of all things PD, George Thomson Services. GTS can be raised from the mist of the Scottish Highlands by phoning 077082 212.

Jason Holborn

Archimedes

ON A SERIOUS NOTE

Software definitely appears in waves. As I pointed out last week, the current trend for the more serious side of computing does seem to be continuing – I've only seen two games this week, and one of those is really aimed at the education market! Perhaps there's some underlying biorhythm-like system and in a month's time we will be once again bombarded with the sound of laser fire and all-round destruction. I'd therefore like to take advantage of this (relative) calm to report on a host (well, three really) of 'presentation' programs: two DTP and one music.

SECOND TIME AROUND

How can you have a DTP program that is as simple for someone who has never used a word processor, and at the same time is as versatile as it can be to cope with the high demands of something more professional? Simple – you have two programs. As I mentioned last week, Computer Concepts has done exactly this with *Impression*. Two flavours are now available: *Junior*, which I dealt with last week and *Impression II*, which is really what-version 1 should have been. *Version II* gives the overall impression (sic) of being much more polished and in general easier to use than its predecessor. Perhaps the best example of this is the addition of effects as well as styles. These are typeface, font height, justification etc; changes that can be applied without the need for setting up a separate style.

The font selection menu is now hierarchical – the first sub-menu contains the font base-name, e.g. 'Corpus', 'Homerton', and the second the various styles, e.g. 'Medium', 'Bold, Oblique'; this at least delays the problem of how to select fonts when you've got 100 or so of them. Frames can be grouped together temporarily or permanently and subsequently moved around. A 'repeat frame' has been added, once placed on a page it will appear on all the rest other pages in the chapter – a bit like master pages. Rulers can now be attached to a given style or be a style in their own right, precise position of margins and tabs can be achieved via a sub-menu.

The style menu itself has grown a bit; the additions being a 'keep together' parameter to help stop headings being put at the bottom of pages and a facility to aid in lining up text columns in different frames. Graphics, both draw-files and sprites, can be rotated within their frames, this requires an additional 20K module to be loaded, but this provides greyscale dithering. The speed of the rotating has to be seen to be believed – eat your heart out *!Paint*. And if all this wasn't enough: the text flow can be shown; chapters can start on left or right pages; the date and time can be inserted (but no approximate time like in *DTOffice*, boo!); the print menu has a separate setup section containing all the oddities you only use occasionally; all keyboard shortcuts are shown and you can even make the caret flash! ➤

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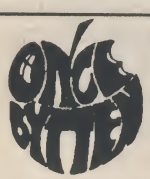

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I've only had the use of a slightly pre-release version 1.98 and I've heard that the few 'features' I've found will have been removed for the final release. All in all a good step in the right direction, my only complaints are that you still cannot easily repel text from graphics and guide frames can't be seen on 19-inch mono monitors.

While on the subject of Computer Concepts, *Equasor* is in its final testing and should be available in a couple of weeks More details then! Computer Concepts is on 0442 63933.

POSTER PAINT

Although not truly a DTP package, 4Mation's *Poster* does for *!Draw* what *Impression* did for *!Edit*. It is really a text manipulator, and although primarily designed for creating posters, it could be used for anything from a business card to page layout. There is no facility for drawing or typing in large quantities of text to display in columns – you have to use *!Draw* and *!Edit* for this – what *Poster* does provide is a wealth of methods for bending, warping and twisting draw files and short (up to 250 character) messages. Text can be made to follow a straight or curved path or squeezed into a 'mould'. Moulds are a special sort of drawfile that contains two or four lines indicating how the text should be distorted. This allows no end of variety of bulges, curves and kinks. The same effects can be applied to drawfiles as well. Objects can also be stretched or rotated in much the same way as *!Draw*. Borders, or simple lines, ornate squiggles or even dragons, can be added to any object.

Poster intelligently divides the final poster up into sections when printing, complete with trim marks, which means you can create pages as big as you want! A number of fancy fonts are provided, courtesy of the Electronic Font Foundry, most of them being well suited for the generation of eye-catching posters but not for much else! Unfortunately, the font selection menu suffers from the old problem of what to do when there are lots of fonts available – I only get up to halfway through 'N'.

The only slight annoyance is that there is no 'snap to grid' option, despite the inclusion of a grid system. Very strange.words alone cannot illustrate the type of output possible, quite literally your own imagination is the limit. The manual (printed on recycled paper) contains a few simple techniques and sample outputs, but *Poster* really falls into the 'suck it and see' category. Full marks to 4Mation for an excellent package.

4Mation is on 0271 45566

THE SOUND OF MUSIC

The latest release from Clares is *Rhapsody*, a music notation program, and is really rather good. If you've been used to Acorn's *Maestro*, you should have no trouble at all with *Rhapsody*. Notes, rests, accidentals and a host of other musical symbols such as trills, triplets, tie and repeat marks can be positioned on up to 24 staves. Staves can be percussive, joined together from two-part sections for piano or grouped for an orchestral score. Each stave can have one or two musical parts on it, distinguished by the direction of the notes' tails. *Rhapsody* intelligently 'beams' quavers etc. together, although this can be manually overridden. As well as notes, tempo and volume changes can be made and even crescendos and accelerandos can be dealt with.

Text can also be added, this can be used for playing instructions or song lyrics.As all good word, sorry 'music', processors should have, *Rhapsody* allows blocks of notes to be moved, deleted or copied. You can also shift the notes up or down the stave, either 'stupidly,' by a number of lines, or intelligently transposing them by a number of semitones.

Playback is achieved either through the internal speaker (external amplifier) or via MIDI. A facility for capturing and transcribing MIDI data has also been included, but as I have no MIDI keyboard, I cannot report on the effectiveness of this! The best bit of *Rhapsody* is the printout. You can print either one stave or the whole score at one of seven scale factors, landscape or portrait. The output is even previewed in a window before being printed via one of the standard RiscOS drivers.

Clares is on 0606 48512.

Ken Coumarin

PC

SAD SPECTRUM

It's a bit sad for Spectrum owners that Amstrad should decide to pull the plug on the Plus 3, but it's quite good news for those buying, or thinking about buying, a 6128 Plus.

You see, Amstrad has stopped making the disk-drive Speccy because it feels it competes with the new model. The Spectrum may be technically far inferior, but it also costs half as much. OK, the 6128 Plus comes with a moni-

tor as part of the package, but the Spectrum will plug straight into any TV.

But how can it be good news for us? Well, without wishing in any way to gloat over the Speccy's departure, it means Amstrad is behind its new Plus models one hundred per cent. It could have carried on making the top-of-the-range Spectrum and let the two models fight it out for their share of the disk-drive market, but instead the firm has boldly come off the fence in favour of the newer machine. That means we can expect full support from the Brentwood company – a welcome change from the years when the CPC seemed to plod along, apparently awaiting the same fate as has befallen the Plus 3.

IT'S A COVER-UP!

Oh dear. All those disk drive owners who bought the October issue of *Express*'s sister publication *Amstrad Action* will be hopping mad by now.

That issue (the magazine's fifth birthday, by the way!) has a covertape on the front, and inside the mag it explains how the programs on the tape transfer easily to disk. Well they don't.

Two problems. Firstly (and most seriously), for some reason or other, the BASIC loaders for both the *Iron Man* level and *Tau Ceti* won't transfer successfully to disk, even though the other files will. The quickest solution is to type in the loaders (the listings are printed in 'Amscene' in the November issue) – they're quite short, and save them on the disk with the other files.

The second problem is that the original instructions contained the command `LOAD"IRONMAN"`. This should actually read `LOAD"!IRONMAN"` (the exclamation mark is important). This is true for all LOAD commands in the instructions. Crikey – what a bung up!

Anyway, this should sort it all out, and readers should now be able to play their *Iron Man* demo and the excellent *Tau Ceti* from disk. We hope!

TIME MACHINE

If first impressions count, then Activision could be in for trouble with the Amstrad version of *Time Machine* – especially if, like me, you've got no time for instructions.

Firstly, it's a Speccy port, and a pretty outrageous one at that. The main playing area is strictly mono. Secondly, the main sprite, although large and well-animated, frequently merges disconcertingly with the background, given the lack of colour. Thirdly, the old giffer you're controlling – Professor Potts – is quite incapable of leaping, kicking, shooting (OK, he can stun them for a spell) or otherwise maiming the small cuddly creatures inhabiting the world you find yourself in. Finally, there's no sound of any description (unless you have a disk drive).

It's all a bit of a shame, since *Time Machine* is a bold, imaginative and complex game.

Daft old professor Potts is in fact a scientific genius. He has just perfected a time travel device, only to be blown back into prehistory by a terrorist bomb. So the perspicacious Potts decides to fiddle with time and even evolution itself as he wends his way back to the present.

The game consists of five levels, each composed of five playing screens. On each level there are various objects and animals to manipulate. Level one, for example, has cuddly teddy-bear creatures that need escorting to a sheltered cave and large rocks that need dropping onto steaming volcanic holes. This second action will start an ice age – which you come across on level two. Here, your creatures have evolved into something more man-like (but not much more). It's all rather complicated and deep (just ask Charles Darwin – oh, no, you can't, can you)

There are lots of tasks to complete on each level and once you've got onto the next one you needn't think that's the end of it – you'll be making frequent trips back in time as well as forward. To aid you in your travelling there's a natty teleport device that can cut out much trudging, while on level one you can shoot a giant mushroom (well that's what it looks like) and a pteranodon will come swooping down and carry you off. Just hit Fire when you want to drop down to the ground.

Time Machine costs £9.99 on tape and £14.99 on disk. That's plenty to pay for what looks like a naff Speccy port, but don't be fooled. *Time Machine* is innovative, complex and involving.

GIANT JOYSTICK

Gamesters with hands like bunches of bananas will be pretty fed up with the average joystick, designed as most are for the more daintily-fingered amongst us.

Well now the digitally deformed can get hold of a giant joystick to fit even their mutated maulers. The SX1100 Challenger has six fire buttons, can be used either by left or right-handed operators and there's even an infra-red version.

Well, Ok, enough of the big jokes. The Challenger range is ideal for those who want a joystick they can really get their hands round. Prices are £24.99 for the cable version and £34.99 for the infra-red model. Manufacturer Contriver

Level One, and Professor Potts stuns a passing boulder ➤

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KNIGHTMARE TIP

Having trouble on the first couple of screens? Vinay Poran of Leeds has the answer: You should go to the dripping wall, take the water and give it to the old man. Then take the food and give it to him. He will give you a magic spade. Then move into the second room (Open Door) and use the spade.

Rod Lawton

64

COMMODORE'S COUNTDOWN

Christmas is just around the corner, with commodore repackaging the C64 in two games-included guises. Both packages contain a C64C, cassette player, two joysticks and four games. The first package, called *Mindbenders*, bundles Domark games *Trivial Pursuit*, *Snare*, *Confuzion* and *Split Personalities*. The second package, with a more dexterous than cerebral theme, incorporates four from Ocean: *Secret Agent*, *Sly Spy*, *Nightbreed*, *Shadow Warriors* and *Midnight Resistance* – the whole package sells under the name *Nightmoves*. For better games, it has to be the one to look out for. Retail prices for *Nightmoves/Mindbenders* are the same: £159.99.

ANTI-COKE CODE

Game of the Week is awarded to *Snowstrike* from US Gold which has a number of points in its favour. First off has to be the basic premise itself: The US government has failed to take the matter of the Colombian drug barons seriously enough to satisfy the military, who relieve their frustration with Capitol Hill by dashing out to the back yard with a fleet of aircraft carriers and half the USAF to stamp out the dandruff dealers themselves.

You play an F-14 pilot. You have a choice of co-pilots and you can go out on ten different missions (in any of four difficulty levels). The missions can be carrier or land-based and involve knocking out cocaine smuggling and production facilities (on land, air or sea). The emphasis is on playability rather than flight simulation, and it works.

DID I MENTION TILT?

I should have done so a few weeks ago. It's a stonking game currently avoiding attention by lurking in the budget sector. Coming from Code Masters at a mere £2.99, it knocks spots off much of the full-priced competition recently released. Each level of *Tilt* is a single-screen maze, through which you have to guide a ball from a starting position to a hole from which it can be dropped onto the next level. The idea is to get the ball to the hole without letting it touch the walls of the maze. But your task can only be accomplished by tilting the whole level or table so that the ball has a hill to roll down. Consequently, the only way of putting on the brakes once the ball is rolling, is to tilt the surface in the opposite direction (you must have seen a pocket-money puzzle working on the same principle).

That is by no means all. A number of gates block the passages on each level. Pressing the fire button at the right time opens all the gates on a level for a couple of seconds, but their positioning, and the fact that you cannot hold them open by any means, requires precise timing by the player. Just to make matters worse, the player only has a certain amount of energy to spend negotiating each level and it's this energy which is used to tilt the table. Spend too much time trying to steer the ball around a hairpin bend and you'll run out of time. To stop the most skillful from sweeping through all eight levels too quickly, a larger ball has to be steered through the last few levels, leaving less room to allow for errors. This bloated bubble has even more work cut out of it by the other unhelpful features *Tilt* brings into play towards the end of the game.

It's well programmed, immensely playable (and frustrating), has great sound effects and a good 'tween-level sequence. You'll be playing *Tilt* long after the last 15 quid's worth of gameyou picked up has been forgotten about.

WRATH OF THE DEMON

I saw a preview version of this recently. It's a horizontally scrolling arcade adventure of enormous proportions and it boasts a complete overdose of parallax scrolling. It's being coded by ReadySoft, the Canadian outfit responsible for *Dragon's Lair*. The animation demo was nothing short of stunning. The scrolling background cavern walls have a fantastic cartoon quality about them, as do the monsters (though these were static in the demo). Joe's sprite was large and well detailed and seemed destined to impress. But we'll have to wait to find out fate has in store. The game is due from Empire but it's too early to say when.

Sean Masterson

PC

LANGUAGE BARRIER

If you want to word process in a number of different languages, forget the PC and buy a PCW with *LocoScript*, at least that's the accepted wisdom. No more it seems, thanks to *Multiwriter* from Data Liberation.

This multi-lingual word processor supports more than 30 languages, including Farsi, Esperanto, Maltese and Serbian (Serbian? Where's that for God's sake?). You can combine English and foreign text together in the same document – even if the foreign language writes from right to left.

It uses pull-down menus and features a 'multi-lingual mail merger', whatever that may mean.

The program costs £199.95 from Data Liberation on 0983 864674.

GRAMMATICAL ERRORS

Also from Data Liberation comes *Grammatik IV*. This is a grammar and style checker, but why we are supposed to take it seriously with a name like that I don't know. *Grammatik* helps you learn about your writing style and alter it if need be. As well as pulling you up if you misuse a word, it will give you hints as to how better to say what you are trying to say. It probably would have helped me out with that last sentence.

I've been promised a review copy of *Grammatik*, so I'll let you know when I've tried it out. Meanwhile it costs £99.95.

WINDOW CRAZY

The world has gone mad over Windows 3, and with good reason. It's pretty, quick, and uses memory efficiently – not to mention multi-tasking. Since a lot of newcomers have recently been thrown into the Windows world – which, when you start to hit the hardware, can be an unfriendly place – a user group has started up to help you out with your `WIN.INI` files.

The Windows User Group looks like a thoroughly professional organisation – judging admittedly from the smart full-colour brochure which dropped through the door. It claims to run a product directory, a magazine, an evaluation centre and to provide meetings and seminars. There is also a technical support service. Although it is an independent group, Microsoft is fully behind it.

Membership costs a basic £46, although the product directory is extra. Departmental membership is also offered for businesses. You can contact the group at Enterprise house, Carlton road, Worksop, Notts S81 7QF or phone 0909 501351.

BARGAIN HUNTING

The Star LC-10 has long been one of the most popular cheap 9-pin dot-matrix printers. It has a reputation for quality and reliability and is often heavily discounted. Alas no more, for Star has produced a new model which will surely supercede the LC-10

And a very good replacement it is too. The LC-200 (no messing for Star – add 190 to the serial number!) is a very nineties-looking beast without a single straight line on it. It will hack along at a respectable 225 characters per second (45 in NLQ mode) and has a useful 16K built-in buffer and, but perhaps-best of all, it can be used as a colour printer merely by swappingover the ribbon. At a listed price of £259, which is bound to be slashed by dealers as it becomes established, it looks like a worthy successor. Star is on 0494 471111.

• *The Star 9-pin printer, with both mono and colour ribbons thrown in.*

NOT THE DONE THING

As a magazine we're not really supposed to comment on other titles, what with accusations of nepotism and all that.But, just this once, a new disk-based magazine for the PC deserves a mention and we are going to have to oblige, so here goes. *PC Interactive* comes on two 5.25-inch disks and needs a hard disk to run (neither fact is mentioned on the cover, which is shrink wrapped.) It contains a half dozen news items and features of general interest, but its main claim to fame is the advertisements which pop up every time you change screens – unfortunately there are only three of them so you get more than a little bored the eighth time the ad runs through its animation and there is no way to change over to the BBC.

The point we were going to make was that interactive magazines are a thoroughly good idea, although unfortunately this one doesn't really cut the mustard. Maybe the next one will.

Stuart Anderton and Steve Patient

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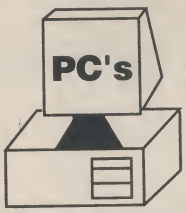

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BEAT THEM UP

It's time to don your pyjamas, take to the mean streets of Manhattan and beat up a variety of evil baddies using your martial arts skills. Again. And it must be, ooh, at least a week since the last game was released which expected a similar course of action. You'd think they'd run a youth club and organise discos to keep all the bad sorts who inhabit the place out of trouble, wouldn't you?

Anyway, Code Masters in all its infinite wisdom wants you to dispense justice yet again to all the 'murderous scum' as the inlay puts it, in its latest cheapie, *Guardian Angel*. And despite the frightening levels of unoriginality it's actually very good indeed. That's not to say it's in the least bit revolutionary though. The action scrolls horizontally as the usual rum types come at you with various Black and Decker weapons and you see them off with kicks and punches.

The game was written by Dinamic Software, Spain's foremost Speccy game producer and originally sold at full price over there. There's definitely a professional gleam and sparkle that's often lacking in similar dodgy budget offerings. As usual with Dinamic games the difficulty level is very, er, difficult and the learning curve must be more like a diagonal line, but real beat-'em-up fans will respect that and enjoy the challenge. All in all, definitely one of the best budget beat-'em-ups around and well worth bagging up. Lets hope the Codies can wrangle some more good Spanish stuff for us soon.

MORE CES

If you've recovered from the rigours of the CES there's another, slightly smaller, computer show you might want to attend. The second 8-bit Micro Show is due to take place on December 1 at Tamworth Arts Centre in, well Tamworth of course.

Both the Speccy and SAM will apparently be well catered for, with machines set up for you to play with as well as public domain, fanzines and software for you to buy. Best of all though, there won't be an ST, Amiga or anything else found to have more than 8 bits in sight. And I wouldn't mind betting that the refreshments will be a few tads cheaper than at Earls Court too. Entrance is a paltry 50p and further details are available when you send an SAE to the organiser, Adrian Betts at Turbo, 8 Healey, Lakeside, Tamworth, Staffs B77 2RF. Be there or be the geometrical construction of your choice.

RISEN FROM THE GRAVE

DGW Griffith of London has just written me an interesting letter concerning SAM and the slightly strange situation the machine is now in. He says, "I admire the way owners of the now defunct MGT have turned disaster around to the extent of being able to now buy machines off the receiver! Also I think the new policy of selling the machine with a disk drive at a cheaper price is bound to be a winner in view of Amstrad ceasing manufacture of the Plus 3 (weird or what?). Such initiative should be encouraged by all – how many other software and hardware companies that have gone bust over the last decade have been able to make a comeback? Perhaps the SAM should be renamed the Phoenix!"

I definitely agree with DGW on congratulating Miles and Gordon's actions since the demise of MGT, they're still the ones keeping interest in SAM alive and the only good thing that could come from the death of the Plus 3 is an upturn in SAM's fortunes. On coverage of SAM in this column DGW gives an emphatic "yup". Let me know if you agree by writing to the usual address?

GET SERIOUS

Although the only kind of software you see in the shops for the Speccy are games, there's a huge variety of stuff out there that doesn't come in big shiny boxes, has a crap plot and require copious joystick jiggling on your behalf.

One of the lesser-know minorities is the educational market, which is surprisingly well populated thanks to the Speccy's early success at getting into the classroom. I've just heard from a Spectrum educational software producer called Teacher's Pet Software (175 Craigton Rd, Aberdeen, AB1 7UA Scotland) and they look like they offer a high level of well designed educational programs for school and home use. They have a range of 50-odd packages, ranging from the rather good sounding *Planet Mathematics* to clip art to *Escape From School*, which is hopefully an educational adventure game. Prices are very reasonable at £4.50 each and I'm sure anyone who uses a Spectrum for educational purposes would benefit from finding out more about what's on offer.

MIKTOR

Here's another poke in a seemingly infinite series from our bestest friend Miktor. Do you know, the old lag is even beginning to get fan mail. Any-

way, to get this hack for *Outlaw* working simply:

1) Type the thing out. 2) Save it for future use if you want.. 3) Type RUN and start your *Outlaw* tape from the beginning. 4) Marvel at the skill and generosity of the man they call Miktor.

```
10 REM OUTLAW (48 + 128) LIVES
20 CLEAR 3E4: LOAD "" CODE
30 POKE 65214,226:POKE 65215,
33
40 FOR N=23440 TO 23446: READ A:
POKE N,A: NEXT N
50 RANDOMIZE USR 65024
60 DATA175,50,251,149,195,0,1-28
```

Have you got any hints, pokes or cheats for any Speccy games? Send them along with anything else Spectrum-related, to Robin Alway at *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW. Thanks!

Robin Alway

ST

MORE STE HEADACHES

Oh dear. I hate to start off the week's column on a sour note, I really do. But it appears there's a rogue batch of STEs that's been sold to customers that get all unhappy and depressed if you try and run a hard disk, and wipes your hard disk data after just a few hours. If you have suffered such a problem, which stems from a fault in the DMA chip, call Atari's customer service line on 081 309 7770.

Such things happen, it must be admitted, though it sometimes seems to happen more to Atari than to others. (When the STE was originally launched late last year, you'll no doubt remember, it proved incompatible with some older ST games.) It's unfortunate, but with the right approach and a determination to put things right there's no reason why it should be any more than an irritation.

Thus Atari's attitude towards the whole problem is all the more indefensible. Not only has it sought to play down the whole thing (when it should be saying, "We are doing our utmost to correct this unfortunate and isolated problem, and apologise unreservedly for any difficulties this may have caused any of our valued customers"), a spokesman is quoted as being 'more than satisfied'.

Worse than that, even after you've discovered how to get Atari to rectify its cock-up, there is, unbelievably, no guarantee from Atari that third party drives will work with the DMA interface!

This is simply not good enough from the company that would dearly love the ST to build on its image as a professional business machine, would you believe.

DEMO ATTACK

If your non-computerate friends ever say to you, "Wossis estee you're always going on about?" You can either a) attempt to correct their speech impediment, or b) show them. The temptation is usually to blind them with a quick run through of *Populous* or *Kick Off*, but unfortunately the complexity of the former and graphic simplicity of the latter usually results in a severe waning of interest.

That's one of the things demos are for. Load up one of the latest and you can blow your friend's socks off. And The Demo Club's latest disk catalogue, recently released, is packed with new and exciting examples of the demo-creator's art.

Such as? Glad you asked me that. Such as *Soundtracker*, a joint venture between Persistence of Vision, which wrote the program, and The Demo Club, which hacked the music from Commodore Amiga games machine demos.

The amazing thing about *Soundtracker* is that it enables STs to play Amiga music. "We have reached a turning point in the quality of music possible on the ST" (Steve Carey, *New Computer Express*, just now).

And as if *Soundtracker* weren't enough, here, very soon, comes *Noisetracker*, a conversion of the legendary Commodore Amiga games machine *Soundtracker* (confused yet?).

The Demo Club is currently porting hundreds of instrument samples over to the ST for this program, which is 100 per cent compatible with both Amiga Mods and voice samples. You can write a piece of music on the ST with samples originating from the Amiga, port it back to the Amiga via RS232 or DOS to DOS and play it in all its glory on the Amiga. Perhaps very soon we'll be finding Amiga demos containing ST music!

The above mentioned software, and the latest disk catalogue, is available from The Demo Club, 23 Alma Place, Spilsby, Lincs PE23 5LB, or call 0790 53741.

Incidentally, the latest 180 page issue of *ST Format*, available now, has a fully useable demo version of *Tracker*, the highly acclaimed (by me, for a start) music creator, as well as an absolutely complete and specially produced version of the Henry Cosh ➤

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CALLIGRAPHER ARRIVES

Eclectron, publishers of the document processor *Calligrapher*, has formed a UK subsidiary to distribute the program in the UK.

The software comes in two configurations, *Junior* and *Professional*. Both include an impressive range of features that at least make credible the publisher's claim that this is the 'most powerful document processor on the ST' with: proportional type; vector outline fonts up to 128 point; multiple columns; five font faces included; spell checker (180,000 in *Professional*); customise facilities; and the ability to accept *IMG*, *GEM Degas* and *Neochrome* graphic formats and GEM bitmap fonts.

Calligrapher *Junior* costs £79 and Professional £139. Further details from Eclectron's UK subsidiary WorkingTitle on 0865 883 592.

EUROPEAN CUP FINAL AT WEMBLEY

Speaking of *Kick Off* (yes I was: read above story), there is currently a national championship about to be played, with more than 5,000 said by the organisers to have signed up already.

Well, the final stages take place at the Computer Shopper Show on Sunday December 9 at Wembley (Arena, not Stadium. Get serious), with a cash prize of £1,000 at stake for the winner. And the champion gets to take on the Italian king of *Kick Off*, where the competition attracted an amazing 15,000 entrants.

Computer Shopper begins on Thursday December 6 at Wembley Arena. Entrance is a fiver, and £3.50 for under 16s.

WIGAN PEER GROUP

Nick Shotton of Wigan writes to complain about the difficulty of finding a local ST user group. "Is there one in the north at all?" he asks. Indeed there is, Nick. Alan Owen runs one, and you can contact him on 0942 212662.

Incidentally, if you run or are a member of an ST user group I'd be delighted to hear from you so I can pass on details. Besides the obvious – contact name and address or, preferably, phone number – let me know when and where you meet, and any special details such as the nature of the group's interests and whether it produces a newsletter. Write to: Steve Carey, ST Express column, 30 Monmouth St, Bath BA1 2BW.

32,768 COLOURS FOR ST!

Incidentally, speaking of user groups, the latest issue of Bournemouth and Poole Atari User Group's excellent 'alternative Atari newsletter' contains details of a hardware modification that increases the ST's colour palette from 512 (4,096 on the STE) up to a modest 32,768. Just looking at it scares the bejaysus out of me – it looks light a fight between a plate of spaghetti and a family of centipedes – but it's somehow heartening to know it can be done, if not by me.

You can contact the BaPAUG c/o 248 Wimbourne Rd, Oakdale, Poole, Dorset BH15 3EF.

WHISTLE STOP TOUR STARTS

Yet another reminder that the Atari tour, visiting Bristol, Manchester, Leeds, Newcastle, Glasgow and Birmingham, begins soon – October 23rd to be precise.

There is something for anyone interested in music, business, education, graphics, desktop publishing or games, and as well as Atari itself you'll be able to meet representatives from Microdeal and Mirrorsoft.

Prizes totalling £40,000 are being given away and there are seminars and demonstrations. Entrance is free, and the activities begin at 11am. In short, it could be quite good. Get along to the following locations, and please don't be put off by the fact that yours truly will be there to start the tour off at Bristol Temple Meads, platform 2, on

Tuesday October 23.

Then it's on to Manchester Victoria (platform 17, Wednesday 24); Leeds (1, Thursday 25); Newcastle (12, Friday 26); Glasgow Central (3, Saturday 27); and finally Birmingham International (1, Monday 29).

Steve Carey

Macintosh

MAC IS HERE

For those new to Macs perhaps I'd better explain that, unlike many other computer manufacturers, Apple has always had a policy of total machine compatibility. Basically, what that boils down to is that a program which runs on one model of Macintosh should run on them all. While this isn't absolutely true (we don't live in a perfect world) the rule should hold good for about 95 per cent of programs. Sadly, the other five per cent are often some of the best games; because programmers use 'illegal' techniques to speed up things like screen drawing, sometimes games have to be re-written to work on new models. I'll be talking more about that problem in a future column, but rest assured that I'll be trying out any software that we review on as many different models of Mac as possible.

THIS COLUMN

Over the coming weeks I'll be looking at how to get the best out of your Macintosh, sorting out the whizziest games and the best cheap 'serious' programs, and investigating what's happening in the Mac world. At least that's the plan so far, but if you want to see any specific subject covered or have any questions, just write in and ask. Remember that much of the Macintosh press has been going for some time, and will not necessarily have the sort of information that you want – much of the writing assumes that you are already fairly Mac-literate. That's where we come in: don't be shy if you're a Mac beginner – come on down! (Well, write on in at any rate.)

FIRST THINGS fiRST

Having bought your Mac, you're going to want to get programs to run on it. Well, here's one to start with: *Disinfectant 2.1*. This is an anti-virus program, and should be owned by everyone who has a Mac. There is no need to panic about viruses on the Macintosh – but that doesn't mean that you should ignore them. While Macintosh viruses are much less dangerous than their PC counterparts (no Mac virus so far has actually damaged data), they spread extremely quickly and so it only makes sense to guard against them. *Disinfectant* is totally free, and is available from any Macintosh public domain software source. There are commercial anti-virus offerings available, but *Disinfectant* should do the job for you with no problems.

DOWN TO BUSINESS

Right, that's got that bit over with. Now on to the important bit: fun things to do with your Macintosh. Let's be honest here, the Mac may be the ultimate productivity tool and it may have the best user interface yet implemented on a personal computer; but the main benefit of using Apple's little baby is that it's fun!

While there certainly aren't as many whizzy, shoot-'em-ups available for the Mac as there are for, say, the Amiga, the Macintosh has an absolute plethora of great games available, for very little money. The reason for this is that the Mac has been around, in one form or another, since the early 1980s. And because it's such fun to use, programmers in their thousands have been writing games, utilities and business programs in their spare time.

Most of these programs originate in America, but the vast majority are available in England through public domain software houses. The Americans believe in the 'shareware' system of software distribution, where you only pay for a program if you like it. When you get shareware programs it is worth considering that a number of programmers actually make their living from the shareware system, so if you keep a program but don't pay for it, you are doing the programmer out of his livelihood. Most shareware fees are only a few dollars; if no-one pays up then the programmers will lose interest and go on to more lucrative work, so depriving us all of any future programs. So pay up!

End of commercial.

THAT'S ALL, FOLKS

And that's it for the first column. If it's nothing like you wanted, write in and let me know (I probably won't do anything, but it's nice to get letters).

If there's a topic that you want to see covered, or if you have any questions (even fairly technical ones – Future Publishing has over 60 Macintoshes, so someone will know the answer!), just drop me a line.

Ian Wrigley

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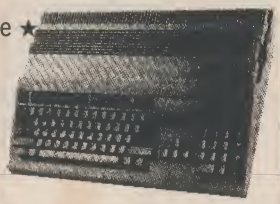

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WHOLE WIRED WORLD

A regular trip around the world with Steve Gold

AMI EXPO REPORT FROM CALIFORNIA

The big news this week for Amiga fans is the bevy of new products unveiled last weekend (October 6/7) at Ami Expo, the major Amiga show held in Anaheim, California.

Although Commodore turned out for the show, the bulk of interest was in what goodies third-party vendors had on display. *Amiga World*, the US Amiga-only magazine, announced its will launch a second magazine – *Amiga World Tech Journal* – next March.

Why the second mag? According to the publishers, more and more technical products are starting to appear for the Amiga and, with the release of Unix for the high-end Amigas, the publishers felt it was time to split *Amiga World*'s coverage into one magazine for games and business users, and one for the serious technical user-base.

The new magazine will include articles on intermediate programming, as well as technical features on different languages. Video and midi enthusiasts are catered for as well. *Amiga World* can be obtained in some of the larger newsagents in the UK with a price of around the £1.80 mark, imported by the Comag distribution chain. So it seems likely UK Amigans will be able to lay their hands on copies of the new mag from next february onwards.

WordPerfect Corporation attracted a lot of interest at the show. As many Amigans will known, the US company suspended its development of future versions of *WordPerfect* for the ST and the Amiga around a year ago, leaving the ST/Amiga userbase to use *WP 4.0*, while PC users rocketed ahead to *WP 5.0* and beyond.

Rumours have been surfacing about the Utah-based company resuming development for the Atari ST, with *WP 5.0* rumoured for launch early next year. Officially, WordPerfect US denies such reports. At Ami Expo, however, WordPerfect officials announced there will be an upgrade to *WP* to allow it to run properly under the latest editions of *Kickstart* and *Workbench*. A future version – not *WP 5.0* – is also in the pipeline, which supports fonts, graphics and the other powerful features seen in *WP 5.0* for the PC/Intel/Unix versions. So watch this space.

AMIGA SHOW DATES 1990

As Ami Expo closed on Sunday, Ami Shows, the organisers, announced 1991 dates for future events. They are:

• **March 15/17**	New York Hilton New York
• **July 26/28**	FL Stouffer, Seaworld Orlando
• **Oct 4/6**	Convention Centre Oakland
• **TBA late '91**	Berlin

Ami Shows has a European office in Vaterstetten, West Germany, which can be contacted on 01-049-8106-31093 (voice) or 01-049-8106-34094 (fax)

SUPRA RELEASES LOW-COST A590 CLONE

Supra Corporation has released its own answer to the RAM/hard disk upgrade for the A500 Amiga from Commodore. The Supradrive 500XP combines a 20Mb hard disk with a series of RAM expansion slots with prices from $679 (for a 512K RAM expansion version)

The drive consumes less than four watts of power and, because of this, does not require external power of any fans, claimed Supra. The RAM is installed – either by Supra or by the user in 512K, 1, 2, 4 or 8Mb configurations.

The unit plugs into the A500's expansion port and comes with utility software for hard disk back-ups, formatting and file management to mention but a few.

Contact: Supra Corporation, 1133 Commercial Way, Albany, Oregon 97321, United States.Tel: 0101 503 967-9075

ANTIC CHANGES START ON-LINE

Antic Online, the Atari ST area on the Compuserve online system, has relaunched itself as the Start Online area. The name change reflects the change in emphasis from 8-bit to 16/32-bit computers in the Atari world.

At the same time, Compuserve has opened a new high-speed port in London that supports modems to 2400 bps with V.42 (that's MNP Class 4 and Lap protocols) as well as MNP Class 5 error-correction and data compression. The surcharge for accessing the London port is the same as Istel – $9-50. Further details from Compuserve's Bristol, UK offices on 0800 289458

SHAREWARE LAUNCHED IN CANADA

Sharewares is the unusual-sounding name of a new company in Vancouver that is acting as an Atari shareware software outlet that is dedicated to handling software for the ST.

Operated by Terry Schreiber, a Canadian reporter for Ron Kovacs' *Z-Net* online newsletter for the ST, the start-up company takes credit cards and, according to Schreiber, is willing to act as a one-stop clearing house for a range of ST software.

Plans call for the company to take advertising in club newsletters and magazines. This will, says Schreiber, help shareware authors on a small budget to get some exposure. Further details from Schreiber – Canadian business hours only please (GMT – six hours) – on 0101-604-278-2099.

TRACY REVEALED DOWN UNDER

As promised last week, further details of the Tracy 'alternative' portable ST have landed in my electronic in-tray. The Tracy system is produced by Austech Computers of Blackburn in Australia and is actually a modified 520 STFM in the machine's casing, but with a wealth of extras plugged inside.

Although the machine has no built-in display, it's been designed to be plugged into a wide variety of screens, including the usual array of monitors and TVs. The first prototype of the unit has just been produced, and Austech Computers will shortly begin commercial production. Tracy contains the following within its casing:

[1] Built-in 40Mb voice coil hard drive.
[2] 720K Floppy Drive (soon to become 1.44 Mb).
[3] 286 PC Emulator.
[4] Spectre 128 Mac emulator (possible Spectre GCR in near Future).
[5] TOS 1.4.
[6] 2Mb of RAM – expandable to 4Mb internally.

According to Austech, all the above goodies have been fitted internally into the 520STFM's casing. The only differences that can be spotted is a hard drive activity LED, located above the function keys and near to the floppy drive. The case has been modified for a new drive and a switch on the back to disable the Spectre 128 unit, so the cartridge port will work as normal if required.

Contact: Lucas Lozo, Austech Computers, 157 Whitehorse Road, Blackburn 3130 Victoria, Australia. Tel: 010 61 3 894 1652 (voice) Fax: 010 61 3 894 1161 BBS: 010 61 3894 2155 (CCITT tones to 2400bps)

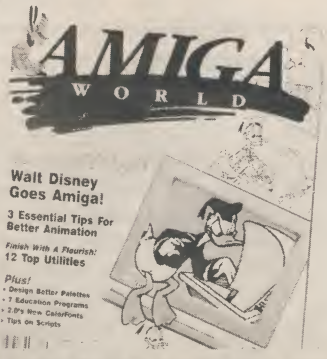
MIGRAPH AMNESTY FOR SOFTWARE PIRATES

Following in the footsteps of other software houses (Wordstar and Xtree spring immediately to mind) Migraph has announced a pirate amnesty for its *Touch Up* image editing software for the Atari ST.

In return for sending in a pirated copy of *Touch Up* (the company has promised not to dust the disk for fingerprints) plus a cheque or money order for $79.95 – or a credit card number – the company will send out a nice, fresh Atari ST disk still warm from its duplication department, with the absolute latest version of *Touch Up* for the Atari ST – complete with a brand new user manual.

The $79.95 price tag includes free upgrades and a wealth of technical support (the company says). The offer expires on December 1 this year.

Contact: Migraph, 200 South 333rd Street, Suite 220, Federal Way, WA 98003, United States. Telephone: 206 838 4677.■



• *Amiga World will next year need a second magazine – Amiga World Tech Journal – to cover as much as Amiga Format.*

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TRAINING FOR YOUR FUTURE

TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Keith Pomfret's Tech Tips and we'll soon see you right. Send your sorry stories to Tech Tips, Beauford Place, 30 Monmouth Street, Bath BA1 2BW.

HELP! Amiga upgrade

When I bought my Amiga it must have been old stock as it had Kickstart 1.2. I've bought Workbench 1.3, but I need Kickstart 1.3 to use it to its best advantage. I am competent to change the chip and understand that the chip is only £20. Are there any unforseen problems to changing the chip?
Andy Melling, Walthamstow

If you know what you're doing, there'll be no compatibility problems from fitting the new Kickstart ROM and if you shop around, you can probably get the chip for as little as £15. If you really don't want to mess with your Amiga's insides (if it's under a year old opening it up will blow away your guarantee.) Take it back to where you bought it and get them to do the work. It will probably jack the price up to about £40-£50, but that's cheaper than a dead Amiga.

HELP! Apricot jam

The Cream box that sits in a corner of the garage must have a use and I'm relying on you to tell me what. It is an Apricot computer and was given to me a couple of years ago when the company upgraded to PCs. It has a colour monitor and a remote keyboard that works like the remote control of a video, sending a signal to the main box.

There is a 3.5 inch drive and a full set of disks with it, but there we come to a problem. There is only 256k of memory. It runs MS/DOS but I can't get any of my PC software to run on it.

The bright orange disks that came with it claim to be a word processor, the MS/DOS operating system and something called Async. Is the patient worth surgery or is euthanasia the only answer?
Trevor Cant, Haltwhistle.

Let's clear up some confusion first. The machine that you have sounds like an Apricot F1. This is an MS/DOS machine that uses MS/DOS 2.1 or thereabouts. This doesn't automatically make it PC compatible. Depending on the BIOS, it may or may not be able to read and write PC disks, but will not be able to run PC software.

The bundled word processor that came with the F1 can write a file that can be read and converted by PC word processor protext so if you've got a later version with the ability to use PC disks, you can use the Apricot to word process at home. The Apricot also has standard serial and parallel ports and can be connected to most printers and modems, although special drivers may be needed to get good results from some of the more complicated printers.

Async is XModem comms software. Using this and an appropriate modem, you will be able to use the F1 as a terminal to go on-line and access all of the on line services and bulletin boards that are available for the cost of a phone call.

HELP! ROMBO, First Blood

My computer is an Amstrad CPC6128. I have a colour monitor, DMP2000 and several serious programs as well as the normal load of games.

At a recent show at Earl's Court there was a stand showing a peripheral add-on that allowed you to mess about with a TV set and get the picture from the TV on to the computer screen. The computer was a PC, but someone at college says that RAMBO did it. I am probably being wound up, but I'll risk it if only to find out if it's possible to connect a TV camera to my CPC and save images into a DTP program such as Stop Press which I have.
Mike Hunt, St Annaland, Netherlands

You aren't being wound up, although your address and the fact that you were at Earls Court suggests that I might be being teased a little. The product that you describe does exist and with the appropriate software, allows you to digitise a 'live' picture from a composite video source in real time. It is from ROMBO (not RAMBO) and is called VIDI CPC. You won't get as pretty a result using the CPC version as it's an 8 bit setup and is limited by the display resolution that Amstrad built in.

The PC version on show at Earls Court was a VGA model with almost photographic resolution. While you won't get this quality, you will get a much better (and recognisable) illustration than if you tried to draw with an art package. VIDI is able to save a picture from a video signal in all three screen modes, but if you wish to use it with *Stop Press*, you'll find that mode 2 is the best as it is already monochromatic.

Stop Press has the ability to digitise straight into the page and it's quite amusing to look at a laid out page on the screen where the illustration is moving in real time animation.

The theory is that you can overlay the video signal into a box and snapshot your illustration straight in. This isn't too bad using a still image or TV camera where adjustments can be made, but is difficult with moving video.

The simplest way is to save the image that you require using the VIDI software and load it onto a blank *Stop Press* page for editing. When the result is as you wish, you can save the image as a screen or cut-out to be loaded into the prepared page.

One warning, however, is that VIDI works from a composite video signal of the sort that can be found on the outputs of video recorders, video cameras etc. It won't work from a modulated TV signal or an RGB/sync signal. This means that you'll need a suitable video or camera to use it.

HELP! Oric information

I've an ORIC and an ORIC ATMOS. They were bought at the time when both machines were popular and have given me immense pleasure. Interest in these fine machines has now dropped off and even the local software supplier no longer wants my cash. I collected over 240 programs for the machines so it's not as if i'm starved of software.

Machine code came easily to me and a few months of sitting up all night wrestling with hex have left me with some interesting home-grown programs including a mouse driver and a document processor. The mouse driver works with the AMS mouse from an Amstrad CPC and the document processor is a poor man's DTP program with all the text and box manipulation modes, but no way to import graphics.

Are there still any clubs out there that I could join (preferably locally) where people are not ready to dump a good machine just because a new one has appeared. I enclose a SAE for your reply.
William Hurst, Aylesbury, Bucks

I won't be breaking any secrets if I tell you that you've no further to look than your own back yard for an ORIC user group. The ORIC user monthly is edited and distributed by Dave Dick, 65 Barnard Crescent, Aylesbury, Bucks HP21 9PW. Watch the *Express* user groups pages for other groups appearing.

HELP! Cryptic clue

Codes and Cyphers fascinate me and a friend and I are working on a third generation factorial encryption and decryption system that could revolutionise data integrity. In this country there seems to be little or no interest in this fascinating hobby, but I understand that there are groups of code and crypt coders in the states. Have you any addresses of them?
Malcolm Jagger, London

The only address that we have for an Encryption group is the American Cryptogram Association, 5052 Chestnut Avenue, Pierrfonds, Quebec, Canada.

However, if you come up with anything particularly whizzy in the encryption/decryption world, I don't think HM Government would be keen on you giving it away over the water. All good ideas of a sensitive nature should be offered to our own people first. The only trouble with this is that search as I did through the phone book, I couldn't find anything listed under Spies, Secret Agents, or MI5/MI6. If Britain's Spymaster would care to give me a ring on the secure line, I'll pass on your details.

HELP! Out of fashion

What about the Newbrain, Dragon and Nimbus. Information please.
Terry Doughty, Co Donegal.

What about them indeed? If you want a weekly column for them, no chance. If you want news then keep your eyes on the news pages. If anything newsworthy happens to any of those machines, *Express* will be the first to know about it. If you would like contacts, here goes:
Newbrain Support Group, 70 cranberry Lane, Darwen, Lancs. Nimbug, 13, Belle Vue Ave, Gosforth, Newcastle Upon Tyne. Dragon, 6 Navarino Road, Worthing, Sussex

If you find any more, please let us know so that we can include them in our pages.

OPENING TIME

A new age has dawned. Germany is again unified and Centrefold has an extra page. To celebrate these momentous events I took Tarquin St John-Sprout and Ms Hanks (she was clad in a fetching puce and magenta bobble-suit with matching lycra accessories) out for a swifty - they're not talking to each other since Sprout managed to blag a free Mega Drive from his sanitation contacts, while Ms Hanks ended up with a Spectrum Plus 3.

We discussed tactics. First off, it seems that no-one out there uses software, as none of you have bothered your faces enough to send in any charts. Secondly, it appears that the one section you lot really do like is captioning pictures. With this in mind I have decided to run a massive caption gallery in a forthcoming issue. Unless the response picks up, the reader charts are dead.

Once that was sorted out, I stubbed out my Old Ferdie's Shag and Cancer roll-up in the boot polish tin which passes for an ashtray at the Hack and Laserwriter (our local) and sent Sprout and Hanks on their ways.

There I sat mulling on the recent disappearance of my spanking new colour 486PC and the fact that my next door neighbour Barry [Boy] Skuzz appears to have an immense smile on his face. You can't tell with some people, and Barry's ability to play *PGA Tour Golf* has improved 10-fold since last Tuesday when the machine went missing.

Three pages will take quite a lot of writing I can assure you. And seeing as I'm training old Gazza (Kasparov that is) for his match with Deep Thought, I am looking to you, my dearest, most perceptive and perspicacious 'Folders to contribute your glorious writings (do you think they'll fall for that load of flannel? For goodness sake remember to sub this bit out!). That said, you can get out of this column and don't come running back to me when you get your legs sheered off in a freak Magimix accident.

Tim Smith's CENT

Write to 30 Monmouth Street, Bath BA1 2BW (If you dare)

Letter Spray

Want to see your name in print? Then write to Centrefold. This week's replies by Mrs Marple's dog handlers chaperone's son's divorce lawyer...

One thing about putting these pages together every week is that my esteemed colleague Haydn Fitz-Williams *(are you sure I have to call that puffed-up berk a colleague? Please remember to sub this bit out as well)* and I get to go out to L'Expensivé Vache and discuss letter reply techniques. This week he suggested I try to be less aggressive in my replies. With this in mind I will print the first letter in the sweetest way I know how.

Sir,

As a keen non-computer user *(I'm not saying a word)*, as yet I have liked the interesting articles and the keen pricing of New Computer Express.

You did invite comment, however, on the pictures in the Centrefold of September 22 issue (two ladies, not Julie Andrews etc). This just seemed out of place in a serious technical magazine - I think it is bad taste, and can offend people, even in the 90's. Some would label it 'soft porn', which I believe can be harmful and lead to sexual offences, deviations, degradation of people etc.

Also I did not find some of the frivolous comments and swear words, albeit few, necessary.

Maybe other readers will agree with my point of view. I think it could cost you readers.

My personal morality as a born-again Christian does make me take this stand. I feel a change of style of some of the articles would mature, make your magazine one that pleases for literary, as well as technical reasons.

Editor, you need not respond to this 'complaint', but just 'take note', if you wish.

Yours T P O'Reilly

Dear T P,

I wish you could have read my reply to the Android from Rhyl in last week's Letter Spray. But there you go. I take your 'criticisms' 'on-board'. I read your 'complaint' and 'I' do 'take note'. I will refrain from printing anything which might be offensive to anyone ever again (Do I really have to keep grovelling and being pleasant to people who can't make the distinction between pornography and cheek? It's making me ill. Cancel those pictures of Venus rising from the waves and Narcissus looking in the pond. Oh and do the usual, sub this out too, cheers)

Dear Tim *(watch the familiarity, chummie)*, Why don't you put something there like 1001 good things about Ken Mosley etc (nobody would read 'em because nobody would believe them).

If what I read is true, that you are returning to eight reviews instead of just one, HURRAY!! One review was an outrage for us Amiga owners (with a god complex, but then don't all 16-bit owners have some sort of complex, especially with the Amiga v ST v A3000 debate which provokes some firey letters)

Yours, Philip Young

PS What is "Still Staff Writer" supposed to mean in Issue 96?

PPS When Express reviews a game (eg Populous) do they keep it or return it to the producers?

Dear Philip, Ken Mosley went in last week.I find game reviews about as interesting as Barry Norman's TV spot, and about as useful. Still 'staff writer' meant that I am still a staff writer. And yes we always return the games... or do we??

WIN FREE TICKETS TO THE ALL FORMATS FAIR

The Centrefold has at least 30 free (£3)tickets to the next All Formats Fair. This will be held at the Royal Horticultural Halls in Victoria, London on Sunday 4 November. You could win one. The only proviso here is that there must be no multiple entries. All you have to do is send me a picture of any of the last England World Cup squad. These can be taken from anywhere, even your own drawings. Remember to include your name and address.The competition works on the first out of the hat principle Entries must be received no later than Friday 25th October otherwise I won't be able to get the tickets out to you in time for the 1st.

I WISH I'D SAID THAT

I WISH I'D SAID THAT

"Though the game is graphically unimpressive it's very satisfying landing a hit on an enemy tank and this can look fairly impressive" Er yes, CU Amiga reviewing M1 Tank Platoon.

"M.A.G.I.C is short for Multi-Access Graphic Image Controller, however we prefer to call it the NOB-BOX" Yes, indeedy , it's a genuine press release from Datapath (Excellence by design) of Derby.

READER CHART

We had another seance this week, and managed to get in touch with your friend and no one else's... Ra-ra Rasputin Russia's greatest sex mashin. Here's the mad monk's top 10 software.

1) AAhghhghhh you are in my power!
2) Oh, computers hokay... how's about Time Slicer?
3) Out! Out! Demon spirits! Sorry, I quite like Prolog-86 Plus
4) Borland Turbo C-V2's really good as well
5) Mmmm how about Superbase Professional?
6) Then there's Lotus 1-2-3, it's a classic you know.
7) Games, games? Go on then, Bobble Bubble?
8) Oooh, oooh, I know... Robocop IV. Well I can see the future
9) Yes, excellent! Player Manager. It's brill.
10) Now give me your wife and all the booze in the house you filth!

THE TOSH TEN

Every week it's trash and this week is no different. Here are 10 ways to appear cool with computers.

1) Own a NeXt machine
2) An unleaded PCW
3) Don't own a Dragon 64
4) Get a butler to format your disks
5) Borrow a NeXt machine
6) Volunteer your hard disk for the SAS
7) Carry a picture of a NeXt machine
8) Use your Psion as costume jewellery
9) Pretend to carry a picture of a NeXt machine
10) Get to Elite status in Elite.

TREFOLD

Tale Spin: Stories from the other side

This is the section of the magazine where veracity, is cast aside like so much encrusted deodorant 'neath the armpit. Stories and points of interest rule the lines. Send your interesting bits in as soon as possible.

FREUD'S FAVOURITE CASE

A reader was kind enough to send in what he thought was a highly amusing top-ten chart which featured 'Ginger Beers'. Such entries as 'Back to the Wall 2', 'Lords of the Rising Bum' and 'Ultimate Tarts'. I'm sure he missed Alan Turing and Michelangelo by accident. For those innocents among you the term 'ginger beer' is slang for queer, which is slang for homosexual. You know what they say about people who go on about it. Now, can we please get back to computers.

AREN'T PEOPLE THICK?

Oz is a gent who I hope that we will all get to know better (more letters Oz). He works as a programmer, and disabused me of my long-held belief that such people are humourless nerds. Here's a few of his stories:

A secretary had rung a support department regarding a problem with the back-up procedure on a system we had recently installed there. I am told the conversation went a little like this:

Secretary: It says insert disk 3 then press key

Support: Have you tried inserting disk 3?

Secretary: I've tried but it won't fit in with the other two.

It is not uncommon to receive 5.25 inch floppies through the post with compliment slips stapled to them. On one occasion we requested a copy of a disk to be sent. A little while later, we received a fax of a photocopy of the requested floppy.

The real killer in my opinion was a terminally efficient secretary who had invented a neat filing system for back-up disks. The computer went down, so we sent a support manager to restore their data files. Upon arrival at the user's site our man asked for their back-up disks and was presented with a ring binder full of neatly punched disks.

Gazza prepares for deep thought

CHESS FANCY THAT

Anatoly Karpov and Gary Kasparov are playing with each other again. The World Chess Championship is in motion. But did you know that Karpov played *Deep Thought* - the world's porkiest chess engine - last February?. The *Scientific American* recently ran a superb article about it. Karpov, playing white, won the game when *Deepy's* programmers pulled the plug on move 65. They then went away and did some tweeking. Kasparov is due to play the beast soon, what does anyone think of his chances?

SCARY OR WHAT?

There was once, and maybe still is, a military theory called 'launch on warning' or LOW. It followed the line that you could pre-program computers to launch missiles if you thought that the enemy was going to hit you. Your computer could declare war. In the case of the US of A this meant bypassing the President.

In 1984 Computer Professionals for Social Responsibility decided to take the US Defence Department to court over LOW - the DD claim not to have heard about it. The CPfSR claimed that the constitution held that only the Pres and Congress had the power to declare war. June '84 saw the lawsuit filed in which computer-declared war was to be seen unconstitutional. The upshot of the story... ? Unsurprisingly, the case was dismissed.

FROM THE ARCHIVE

What do you remember about what you were doing a year ago this week? Do you recall what was in the news? Well stop agonisingly wracking your brains and read on... It's the Archive.

HACKING K'OFF

"Innocents will be corrupted" says computer lawyer. Well the lawyer wasn't actually a computer, he was 'leading barrister' Alistair Kelman and he was commenting on recent recommendations to a new hacking law. The theory was that the law which would derive from them would be too stringent and would tar comms dabblers with the same brush as the serious hackers.

ANOTHER SUPER FAST PC

Hewlett Packard announced the Vectra 486 PC. It was said to be the first personal computer to use Intel's i486 processor chip. It also used the 'controversial' EISA standard, rival to IBM's MCA. The Vectra was also said to be able to rival some mini, and even mainframe, computers.

GARBAGE IN

The world's first talking rubbish bins were installed in Wrexham's town centre. We said: "The bins are limited in their computing capabilities but their main function is to talk. They can be programmed to speak in any language." The bins said: "On behalf of the council and advertisers, thank you for keeping the town clean." The bins were also ecologically sound being solar-powered. They also cost £1,000.

CD GOINGS ON

Mirrorsoft, like the rest of us still unaware of the Turtles, decided to invest £5m into developing CD-ROM products. The first planned launch was to be the Guiness Book of Records.

I SHOT THE SERIF

Nintendo's marketing people, Serif, were planning a major TV advertising campaign for Christmas (sound familiar?). The ads were to show the full range of Nintendo product, including the friendly robot - it was to be all happy families.

TO RUSSIA WITH LOVE

A PC manufacturer won a £250,000 order to export its XT and 286 machines to the Soviet Union.

CAPTION FULL STRENGTH(I)

All you caption lovers out there should pay homage to Ms Hanks (our coffee machine operative who is presently locked in the dark room sobbing her little heart out). She saw this picture and immediately knew that it was worth a caption and, in her words, she went for it. Unhappily the news editor also saw it and demanded to use it in his 'more prestigious' news pages. Ms Hanks begged, pleaded, wheedled and threatened to hit him with her Gucci-copy candlewick bum-bag. Eventually she had to promise never to talk to him again, pay him £20 and, I quote "Stop wearing those bloody awful clothes."

Can you come up with a suitable caption? If so, please send it to the 'Get Ms Hanks Out of the Darkroom Memorial Competition' at the usual address.

THE WINNERS

Aren't quite here yet

I know that you all think I keep you in suspense about who has won what prizes and when and I'll tell you why. The entries come in a dribs and drabs and I don't want to treat you readers like a bunch of brainlesss beings who don't deserve the full potential of my time. So, what I am going to do is run a massive winners section the week after next.

In order that you get the chance to win something I am calling an amnesty. All you have to do is write in on the back of an envelope or postcard and tell me why you think that you should have won a prize even if you have never bothered entering anything.

But before we go any further there are some rules, I like rules especially when they're mine, to be adhered to from now on:

1) Multiple entries are fine by me

2) You should mark which issue your entry relates to

3) You should cheat, lie and play the silly devil as much as you like as long as you are witty

4) My decision is final and that's it jack!

5) No correspondence will be entered into unless you send a photograph.

6) That's the lot

Cheers then and, hey, good luck.

OUT OF TOWN TOP 10

The Gallup charts tell you what the country thinks is the Top Ten software chart. The Centrefold actually calls up shops and asks people on the front line. The first of our Out of Town Top 10s was compiled by Mike Wheble of Manchester's The Computer Shop. Find it at 121 Market Way, Arndale Centre, Manchester, M4 2EA. Call 061-832 0878 and ask for Mike, Ian, Brad or Sarah - tell them Tim sent you. For God's sake don't ask for Jeremy, he's the boss.

TOP 10 8-Bits

1) *Lord's of Chaos* (Laser Squad, a bit D&D)
2) *Midnight Resistance* (Shoot-'em from all angles)
3) *TNT* (Compilation with Toobin and APB and others)
4) *Kick Off 2* (The only time West Germany will ever get to play again)
5) *Heroes* (Skywalker and Arnie kick some bottoms)
6) *Back to the Future 2* (Micheal J Fox the same size on screen as real life)
7) *Sim City* (Brain frying town planning)
8) *Dragons of Flame* (D & D™ influenced jobby.
9) *Subbuteo* (A sim of a game into a sim of a sim)
10) *Deliverance* (A sequel to Stormlord, nice graphics)

TOP 10 16-Bits

1) *Battle of Britain* (their finest hour, not a bad game)
2) *Operation Stealth* (Graphic adventures)
3) *Shadow of the Beast II* (Psygnosis' scally style with the naked man)
4) *F19 Stealth Bomber* (Probably the best flight sim on the market)
5) *Corporation* (RPG + balls)
6) *Fun School 3* (The teddy bear's picnic)
7) *Loom* (Adventuresome stuff, a bit easy but fun)
8) *Wings* (Mike Wheble's fave game. A good solid flight sim)
9) *Silent Service II* (excellent sub-sim)
10) *Midwinter* (Vector graphic, snow-capped weirdness)

Cheers to the Mancunian crew. More next week. Why not hassle your local shop into sending us a chart?

WIN SOMETHING REALLY GOOD AT A BRITISH RAIL STATION IN BRISTOL AND STOP HAVING TO READ THIS HUGE HEADLINE FOR VERY MUCH LONGER (look no Express train jokes)

Yes, for the first time in anyone's recollection The Centrefold actually has a reasonable prize to offer. It's going to amaze you so much that you're probably going to keel over in a dead faint and be incapable of collecting your winnings. Consequently, I get it. What is it?

It's a Lynx. Ooooh yes! Can you dig it? Can you feel the force of the sweetest little handheld games fun action pleasure-spot-hitting device since finger-bob Subbuteo?

The Lynx is from those fluffy little devils at Atari. You can play it in bed, on the lavatory, at the bottom of the garden or 20,000 leagues beneath the sea (as long as you're in a submarine because it's not waterproof, yet). It hits the £170 mark and has a whole bunch of games ready for it. You can win *Slimeworld.*, a multi-play game as a starter. How do you win? S'easy. All you have to do is turn up at Bristol Temple Meads railway station with the coupon below. Chuck it in a bucket on the Atari train and wait to see whether your name is drawn. No questions, no nothing. There's also free entry to the train which will be ready for boarding at 11 AM on the morning of October 23. You also get the chance to meet me, and a few of the crew from little sister magazine *ST Format*. Good lord the 23rd is seven days before my birthfjfjdfk (*Ok what heartless swinebrain subbed that?*).

Finally, if you live too far away from Bristol to get to Temple Meads; you might actually work for a living or you might even be at school, then all you have to do is send your coupon to me here at the Centrefold office, and I will take it down to the train myself.

I can't say fairer than that now can I? So get those coupons in as soon as you possibly can. And that's the advertising over with for this Centrefold.

CRIVVENS!

IT'S THE 'WIN A LYNX WITH THE CENTREFOLD' COMPETITION BY THOSE SUPER PEOPLE AT *EXPRESS* AND ATARI.

Please fill in the following if you want to win a Lynx.
My given name is .....
.....
When stopped late at night I tell the authorities that my address is.....
.....
.....
The Centrefold should win Best Three Pages in the Middle of a Magazine.(please tick choice) YES ☐ YES ☐

This coupon should arrive at the Centrefold office no later than the morning of Monday 22nd October. Or you can bring it directly to Bristol Temple Meads railway station.

DISPATCHES

A new series of articles in which the Centrefold's stable of foreign correspondents wire in the stories of the moment. This week we hear from our man on the East Coast - Joe Sixpack.

Joe Sixpack... a man and his hat...

Yo there asshole!
Have I got some hot news for you this week. Lindybell-Billybob Binks and my good self headed up to MIT recently to check out the Artificial Intelligence labs. Far out.

They are developing a hunk of PC software which is so artificially intelligent that it already wants to leave the country and set up a rubber pet food bakery (there are still a few glitches) in Worcercestireshire, that's England. It runs from the hard disk and requires 640k RAM as a minimum. There is no VGA support but that is said to be in the pipeline. For more information call Artificial Intelligences R Us on 0101-415 7636 83837 377373.

After this we decided to hire a 1959 Cadillac Fleetwood Convertible (series 62 that is boy) because of the extra-wide front seat and hard-wired Super Mario Brothers which you can play from the stick shift.

We didn't need to get back to Bootsville GA - the home of the Bootsville Wretches, best goddam football team in the west - also home to Lindybell-Billybob and my good self, too soon; so we went to see Conchillio Del Ramcaché. Conchillio is one of the finest game programmers in the free world and has come up with a wump-pumalooa of a game called *Depopulous*- he was with Ollie North for a while. Available on the Mac, Amiga and PC it will retail for $45. Call Deforestation City Kickers Inc when they get a phone.

That's it for this week, I'll expect to see the cash soonest. Say a big Bootsville "Hi y'all" to all my good friends over there in the UK and tell then not to worry about being a Third World country computerwise. Ride high and I'll check you soon.

◆ For Sale

PCW 8512 £350 BBC B £250, RM-Nimbus X-10 £750, Juki 6100 £165, Tandata Modem £95, Dual 4OT Drives £75. All excellent condition. Peterborough 0733 232931.

ZX Spectrum Plus 2, many brand new games including Shadow Warriors, Batman The Movie. All for £150. Ring Wolverhampton (0902) 25813.

CBM64 with Database Mouse Art Package, Joystick £120 . Games inc. Batman, Power Draft, 13 mags, vgc. All for £170. Ring Tring 7256 after 6 pm.

ATARI Lynx and six games £200 ono. Will exchange plus money for any megadrive games. Tel 081 560 0197.

C64 tapedeck, Joystick, 160+ games inc. latest titles, manuals, etc. Excellent condition £125 ono. Tel (0277) 657485 Essex.

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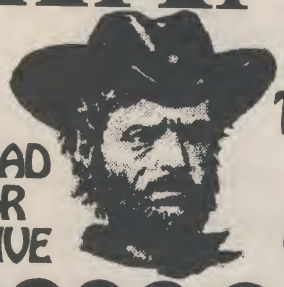

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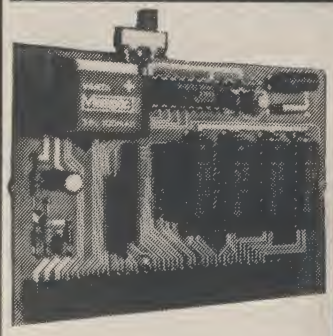

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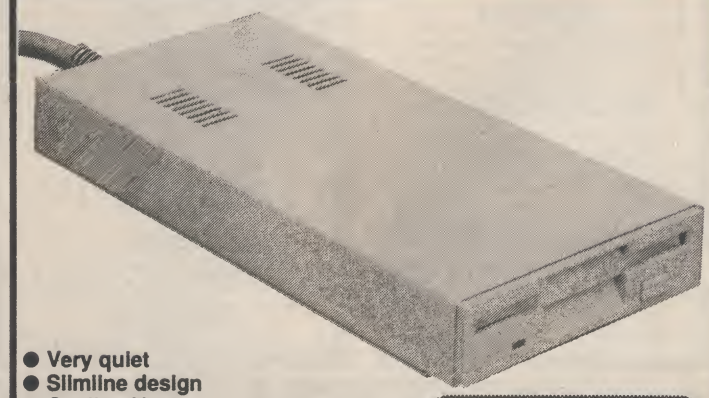

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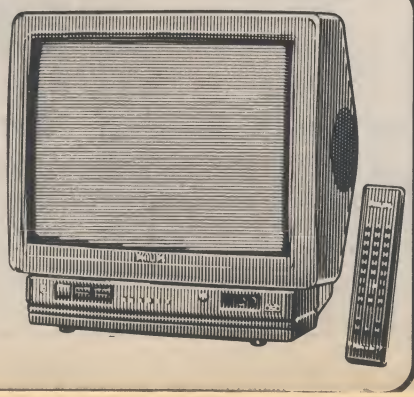

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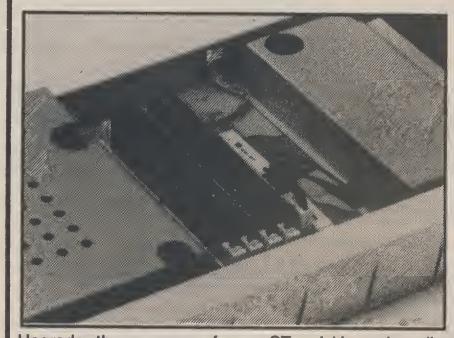

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Remotelpcw	0555 851887	V21/22/22b/23
Rivendell	0602 640488	V21/22/22b/23
Rm Tech. Support	0865 796431	V21/22/22b/23
Road Runner	061-483 4105	V21/22/22b/23
Roamer I	0292 45345	Hst
Royalink Uk	0962 66807	V21/22/22b
SAC Bbs	0242 260685	
		V21/V22/V23/V22bis
Sas Bbs	0742 325232 Rb	V21/22/22b/23
Satellite Southwest	0392 53116	V21/22/22b/23
Saturn Bb	0282 23570	
Scabs	0909 479080	V22bis
Scary Monster	0734 320297	Hst
Scot Air	0505 36036	V21/22/22b/23
Scothelp-st	031-313 2734	V21/22/22b/23
Scottish Opus	041-880 7863	V21/22/22b/23
Scottish Wildcat	0674 671141	V21/22/22b/23
Scs One	0444 236002	V22b
Sector	0772 454328	V23v
Semaj Qbbs	0303 862415	V22/22b
Sentinel Bb	0628 781429	V21/22/22b/23
Shades	0342 810905	V23
Shadowfax	0252 528146	V21/22/23
Shadowland	081-897 0488	V21/23
Shareware Library	0424 83654	V22/22b
Shasby'S Lair	0772 561066	Hst
Sherwood Forest	0602 397113	V21/22/22b/23
Short Circuit	0273 462967	Hst
Sid (acorn Service)	0223 243642	V23v
Signal Box	081-337 6583	V21/22/22b/23
Sin Bin	0532 661536	V23
Sirius	081-542 3772	V21/22/22b/23
Sirius li	0494 778425	V21/22/22b
Skull'S Tower	081-943 1194	V21/22/22b/23
Sky-line	0603 742273	V21/23/23v
Skyline 1	0234 741691	Hst
Softmatic Bbs	0733 322540	V21/22/22b
Software Source	0892 661149	V22/22b
Sounds Of Mercia	0203 682896	V21/22/22b/23
Sparx	0793 480287	V21/22/22b/23
Split Infinity	0342 712248	V23v
Pook Bbs	0268 767365	V21/22/22b/23
Sputnik Spitfire	0501 31754	V21/22/22b
St London Bbs	081-443 2432	V21/23
Stabb	0793 855176	V21/22/23/22b
Staines Bb	0784 465794	V21/22/22b/23
Starbase One	071-733 3992	V21/22/22b/23
Strange Brew!	081-665 5038	V22/22b
Stun User Network	061-429 9803	V21/22/22b/23
Summer Wine	0484 653234	Hst
Sunbum Inc.	021-449 5269	V21/23
Super Ops Bbs	0782 284081	V21/22/22b
Swindon Newc Bb	0793 616683	V21/23
System-c-v	0403 50607	Hst
T.a.b.b.s.	0533 517615	V21/22/23
Tabbs	0225 743797	V21/22/22b/23
Taecomm	0994 6709	V21/23
Taff'S Retreat	0834 4562	V21/22/22b/23
Tardis	0772 27236	V21
Tasque	0355 222664	Hst
Tasug Opus	0904 760129	V21/22/22b/23
Tavern	081-445 6514	V21/22/22b/23
Tbbs-rovoreed	081-542 9767	V21/22/22b/23
Tequila Sunset	0703 867786	V23v
Terminal Net 5	0402 456135	V21/22/22b/23
Terminal-net	081-423 5262	V21/22/22b/23
Tharr Bbs	0234 261804	V22/22b
Third Wave Systems	071-585 3163	V21/23
Three Kings	0354 56267	V21/22/22b
Track 83	0953 851351	V21/22/22b/23
Trans-atlantic Res.	0375 25375	V21/22/22b/23
Transylvania	0274 621668	
Tranz-corn Bbs	081-952 6273	V21/23
Trinity I	0392 410210	V21/22/22b/23
Trinity li	0367 22764	V21/22/22b/23
Tug li	0905 775191	V21/22/22b/23
Twilight Zone	081-788 0884	V21/22/22b/23
Twilight Zone li	071-608 1485	Hst
Typesetter's Wkshp	0274 491606	V21/22/23
Uk Healthlink	0942 722984	V21/22/22b/23
Unisys Etoi Bbs	081-453 5739	V21/22/22b/23
Unit One	0285 713688	V21/22/22b
V.i.t.a.s.	021-749 5860	V21/23
Valente'S Bbs	071-978 2078	Hst
Vector System	0329 45824	Hst
Viking East Anglia	0255 503048 Rb	V23v
Village	081-464 2516	V21/22/22b/23
Village Fayre	081-841 5971 Rb	V23
Voyager Bbs	061-725 9580	V21/22/22b/23
White Lightning	0635 37259	V22/22b
Whitehall Pent	071-930 3903	V21/22/22b/23
Wild Imaginings	091-263 4303	V21/22/22b/23
Winchester Remote	0962 69322	V21/22/22b/23
Wolverhampton Ros	0902 745337	V21/22/22b/23
Womble Base	081-979 9606 Rb	V23
Woodgreen Bbs	081-889 5624	V21/23
Yugo Bbs	0734 753648	V21/22/22b/23
Zeus Bbs	0487 710487	V21/22/22b/23

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Keyboard FS680
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- Left/right locator
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- Registration page
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Funlab Music System for Amiga including: MIDI Interface, FS680 Keyboard, Midi cables and software.

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Kawai Music system for ST including FS680 keyboard, MIDI cables and Midistudio sequencer software.

For ST £330

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CIRCUIT CITY

Planning, designing and constructing a project for your computer could leave even the cleverest scratching their heads. This week Keith Pomfret looks at some kits and projects that you can buy off the shelf.

Anything's possible and a glance through this year's Maplin Catalogue (the Circuit City bible) offered everything from a Geiger counter to a Star Wars LASER. These two projects are exciting, but not of a lot of practical use unless you're planning a holiday to Kiev or a job on Battlestar.

In among the coherent light and clicking counters there were several projects that attach directly to a computer and/or have practical uses. I've weeded a few out for your perusal and later in the series, I'll be getting out my soldering iron to tackle them.

Drop a postcard this way to let me know which ones you'd like to see in more detail.

For now, we'll have a look at what's there and what it could be used for. Before you take on any of these projects though, be warned: it's very rare to start and finish them in one session.

Ideally, you should have some workbench or flat area where your project won't be disturbed if you have to break for meals/sleep/work or any of the other annoying things that life places in the way of fun. The kitchen or dining room tables are a bad bet as people tend to want to eat off them when you are at a critical point. For all their use as tasty troughing, marmalade, minced-meat and Marmite don't make good flux for your solder.

If you have to work on a temporary surface, plan well ahead and be 'clear' before the steaming casserole is dumped unceremoniously on your PCBs.

Once you've sorted out your workspace, pick a project within your abilities and plug in your iron.

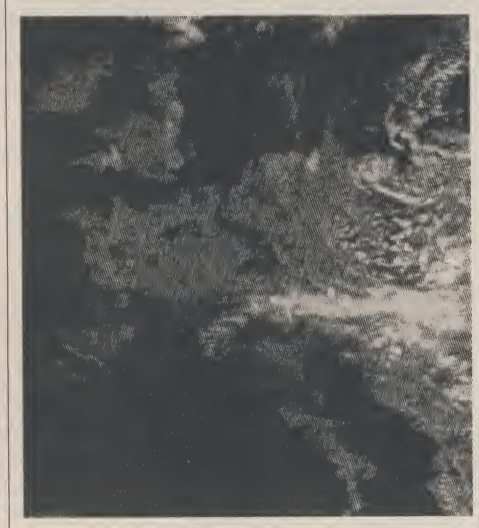
PROJECTS ON OFFER

VCR Dubbing and changeover kit.

This was originally designed with the home video enthusiast in mind as a simple way to dub video from VCRs and Camcorders. But with multimedia peeking around the corner and many people already grabbing video digitising by the horns, it is a useful way to control all of those signals without constantly changing leads. Connections are via standard Scart plugs and up to three machines (two source, one output) can be connected simultaneously.

TEA2000 PAL Colour encoder.

Colour and timing inputs are encoded in this unit. The output result is either a composite video signal for direct connection to a monitor or an RF modulated frequency to allow direct connection to a TV.



• Eye in the sky – weather information from satellites can be read and loaded on to a standard TV set or imported into a home computer for more permanent storage.

1.2kw Power controller.

This is a standard power socket with circuitry to control power levels. It works in a similar way to a dimmer switch on a lighting circuit and can handle loads of 720w. It is an ideal power supply for a soldering iron, giving precise control over the temperature. It will also work as a speed control for power tools such as drills (not electronically controlled devices though)..

220/240v inverter.

This clever little box takes the power from a car battery, inverts it from direct current to alternating current and transforms it to mains voltage at 220/240v. Although you cannot expect a car battery to run a list of mains appliances for long, it is a useful device that can help in times of a power cut and allow you to use your desktop computer away from the mains (on caravan or boat etc). In a situation where there's a constant charge to the battery such as in a moving vehicle, it will provide constant power to run appliances. (This is how many of the cross-Europe coaches manage to run freezers, microwave ovens and video films.)

Digidice.

This isn't of any great practical use, but it's a simple kit, easy to make and is good practice for the beginner. The kit electronically generates a pseudo-random number in the range 1-6 and displays it in a dice-like form. Push a button, get a number. It's as simple as that.

RTTY unit.

This takes RTTY signals (Radio Teletype) and decodes them into a standard RS232 type signal. In order to use this kit, you need a short wave communications receiver.

Radio Amateurs use RTTY to send messages via radio and avoid the cost of the huge phone bills that can come from telephone modems. Using the RTTY unit, a suitably equiped computer and a short wave comms receiver, you can eavesdrop on the RTTY world. If you have the requisite licence and transceiver, the RTTY unit allows you to transmit as well as receive.

Amplifiers and Speakers.

Whatever computer you use, you could probably benefit from amplifying the audio output. Whether you have a simple mono or full spatial stereo output, the use of a proper amplification setup will surely enhance the quality. Even the PC, with its impotent beep, can benefit. Soundcards have allowed the PC to sing and growl with the rest of them. Pick the right speakers and amplifiers

• The Korg T3 music station accomplishes digital processing to ensure high quality sound synthesis and easily connects to the Maplin MIDI thru box.

• *Amstrad's new CPC 6128 Plus is compatible with the CPC expansion system via a simple connector.*

for your location. There'd be no point in running a 1000 watt sound rig in a boxroom, nor a pair of walkman speakers in a ballroom. Pick wisely and watch *Circuit City* for computer audio connections soon.

MIDI thru box.
If you're planning a MIDI set-up, this kit must be first on your list of wants. It offers an opto-isolated input and eight buffered MIDI outputs. This means that if you want to connect several modules, a computer and a MIDI keyboard, they can all connect to the same box instead of being 'chained' together in a linear fashion. This prevents MIDI lag and dropout, the two biggest problems of running a multi-MIDI set up.

Live Wire and Metal detectors.
These two simple-to-make probes are useful tools to have around. The live wire detector will tell you whether a circuit is live whether or not there's current flowing. This is done by proximity so there's no necessity to actually touch anything potentially dangerous to find out if it's live. The metal detector can tell you if there are any mains pipes or studs lying in wait under the surface of the spot where you want to put up a shelf or bracket.

Mini Lab Power Supply.
This complex kit gives fixed and variable 'bench' power supplies for testing your projects and driving equipment under test. It's a difficult project to undertake, but will pay rewards and dividends in its usefulness. It supplies 5v, 15v and 12v fixed and a variable 3-20v output. Many other features make it the most desirable piece of equipment on this list.

Logic Probes and testers.
Getting into the realms of the technical, if you need one of these, you won't need an in depth description of what it does but simply, the probe offers an alphabetical display of a single letter (H for high, L for Low, F for floating, P for pulsing). The Logic IC tester is a PC board with software to allow the full logic testing of any of the standard TTL and CMOS logic chips up to 20 pin DIL.

MAPSAT Weather satellite receiving system.
This unit is designed to read the weather information currently being beamed to the earth by several satellites. The data can be saved to standard cassette tape and then either loaded onto a TV screen for viewing or imported into a home computer for more permanent store, display manipulation and display.

The American TIROS-N series of satellites and the Russian Meteor and Cosmos Satellites can be received in the UK. There are several modules to make up the full kit so this project should be looked at as an ongoing long term job.

Amstrad CPC expansion system.
The popular Amstrad CPC series of computers was blessed with a 50-way expansion port that was just itching for peripherals. Over 250 pieces of ROM software can be paged into the CPC, some foreground, some background. The Amstrad Expansion System starts with an external ROM expansion unit which will hold up to eight 27128 ROMs or EPROMS. An external controller card and motherboard allow the addition of I/O ports and a fully illustrated booklet contains complete construction and instruction details.

NICAM TV stereo sound system.
With Multimedia, TV insert and sound and picture sampling becoming more popular, the advent of digital sound for broadcast programs means that there's yet another digital source to add to the list of computer processable media. The NICAM sound system will allow you to receive and process digital broadcast sound without the expense of a NICAM TV receiver.

LASER.
When someone first shot the output of a gas discharge lamp into a cylinder of synthetic Ruby in the 1950s and the result was a beam of coherent light, the scientists clamoured around and the LASER beam then became the prima donna of the scientific world, light years away from any kind of home application. An early *James Bond* film cast the LASER as a death ray and it took until the 1980s for anyone to harness it to a domestic application. Nowadays, you can expect to find a beam of coherent light in a portable CD player and the beast is truly tamed.

The LASER kit is a little bigger than the CD-sized module, but is a simple domestic kit that can be built by the average home electronics hobbyist. A controller is also available to relect and refract the beam through and from rotating mirrors to give a pleasant pattern of moving light on a wall or through mist or smoke.

Geiger Counter.
You'd better hurry if you want your own personal Geiger-Muller counter as it's due to be discontinued this year. It's a simple kit for all but the most clumsy DIY person and as well as detecting the nasty Gamma and X-Rays, will also detect Alpha and Beta particles.

It is fully portable, works from a 9v battery and accessories such as a geiger remote probe are available. To make life even simpler, there's a project book available to guide you through the construction.

Finally, the Geiger counter and Laser kits are available at 99.95 (Diff 2) and 99.95 (Diff 3) respectively. So there you are. 200 and you're prepared to do battle with a laser on your shoulder (don't stray far from the mains though) and a Geiger counter to guide you through the vast nuclear wastelands . . . May the force be with you and all that.■

SIMPLE, ISN'T IT?

The kits are graded by Maplin in difficulty from 1-5:

1 – Suitable for absolute beginner.
2 – Easy to build but may need test gear and setting up.
3 – Average. They require skill in construction and setting up.
4 – Advanced. May require specialist gear to set up and test.
5 – Put on your protective gear, these ones are totally wicked and complicated.

MAPLIN is on 0702 554161

WHAT'S THERE AT A GLANCE

● 220/240v Inverter
Price £64.95
Difficulty 4

● Digidice
Price £9.95
Difficulty 1

● RTTY Unit TU1000
Price £54.95
Difficulty 4

● Loudspeaker Kits
Price Varies
Difficulty 3

● Audio Amplifier kits
Price Varies
Difficulty 1-5

● 8 Way MIDI thru' box
Price £19.95
Difficulty 3

● Live Wire detector
Price £3.95
Difficulty 1

● Mini metal detector
Price £5.25
Difficulty 1

● Mini Lab Power supply
Price £39.95
Difficulty 5 (OUCH!)

● CMOS Logic probe
Price £12.95
Difficulty 3

● Logic IC Tester (PC card)
Price £69.95
Difficulty 3

● Amstrad CPC expansion system
8ROM card with throughport
Price £44.95
Difficulty 3
Booklet to go with above £1.50

● Spectrum Easyload (Tape load utility for
Spectrums with separate tape recorder)
Price £11.95
Difficulty 2

● NICAM Stereo TV sound system
Price £139.95
Difficulty 4

● VCR Dubbing and changeover kit
Price £59.95
Difficulty 2

● TEA2000 PAL colour encoder
Price £19.95
Difficulty 5

● 1.2kw Power controller
Price £20.95
Difficulty 3

● MAPSAT weather satellite receiving system
Price £74.95 + £11.45 for the aerial
Difficulty 3
There are several more modules necessary to produce a complete weather station.

THE PD COLUMN

There's a wealth of free software out there which is yours for the price of a disk. Our PD man, Adam Waring, takes a look at what manner of wonderous freebies are on offer this week...

Silent Fantasy • Amiga • Lorenzo's Domain • Disks 218A & 218B

Are you any good at art? I know I'm not, and am insanely jealous of anybody who shows the slightest inkling of being able to draw anything above the quality of the Mr Men.

So when I looked at the 'Silent Fantasy' slideshow I was pulling my hair out with rage. It's a disk filled with pictures of the most astounding quality.

The piccies are drawn in the Amiga's low resolution 32-colour mode. The digital drawings are very much in the vein of the airbrushed illustrations you find on the covers of science fiction and fantasy novels - in both quality and subject matter. You know the sort of thing: strange alien landscapes and weird mythological creatures. And of course the odd scantily clad female - after all, a disk like this wouldn't be complete without them, would it?

The collection comes on two disks. There are dozens of pictures to goggle at. Each has a separate piece of text that scrolls along at the bottom of the screen. It's not really all that informative, telling you how mega cool the artist responsible is, rather that anything about the picture in question. Many of these messages are in Danish (or some similar language) so they're even less informative. Music plays merrily away at the same time as the pictures are displayed. Just the thing to show off the immense graphical capabilities of the Amiga to the amazed gasps of your friends.

• Fantastic artwork from the Silent's slideshow

ST News 5.1 • ST & STE • Sphinx Software • 1Mb and D/S drive required

A new mgazine has just appeared for the dear old ST, with a startling original name. *ST News* is a magazine on a disk all about the ST scene. Across the top of the screen the sections of all that's on offer is listed.

The information is split into logical categories. There are sections on reviews, news, features and other ST related bits and pieces.

All the copy can be read through the special reader program provided. It's easy to use, and boasts an immensely irritating tune that can be turned off - thank goodness.

It's well written, and quite informative. Unfortunately 5.1 is the last ever version of the newsletter, so it's a case of buy now or never!

ST Sheet • ST • Sphinx Software • Uti 67

You must know the situation. Maths are not everyone's strong point and sometimes those figures just don't add up, in which case it is no laughing matter - especially if you have this year's

• It's Dobbin the flying horse, another surreal creation from the slideshow.

Lorenzo's Domain
Amiga P.D. & Shareware

A SMALL SELECTION FROM A GREAT COLLECTION

MUSIC
101: Definitive Docklands by H.C.C: Fantastic colour pictures and music
102: Lorenzos music utility disk :Rippers and Players galore
103: Digital Concert no 4: by Flash Productions
104: Lorenzo's musical delight
105: Future composer
106: Noise Tracker Collection (3 disks)
108: Freek'd out by the Crusaders
109: Flash by Queen : (2 Disks)
111: Rave Demo (1 Meg) by H.C.C
113: Dmob Music Demo No 2
114: New music demo by HCC

DEMOS, INTROS & MEGADEMOS
204: 8 radical demos by Abandon, Cave, Dual Crew, Kefrens, Mahem, Vision etc
205: The Dexion Megademo: Cooooool stuff baby
206: 5 major demos Including: The Revenge Of Babbnassen, Cebit 90 by Red Sector
207: 6 of the best including: Follow Me by Red Sector, Celtic, T.P.L etc
208: The CryptoBurners: Megademo 2
209: Scoopex: Mental Hangover
210: Alcatraz: Megademo 4 : (3 disks)
211: Outsiders: Acid Demo
212: The Kefrens: Megademo 8 (2 disks)
213: The Dragons Megademo
214: The Silens Megademo
215: The Predators Megademo (2 disks)
218: The Silents: Fantasy: (2 disks) great pictures
219: Bacteria: The Crusaders
220: Collection of intros including Trip to Mars and Meg Zarjaz
221: Popeye Meets the Beachboys: It's ravin mad pal.
222: BudBrain Mega Demo X (2 disks)
223: Deathstar Mega Demo (2 disks)
224: H.C.C Toxteth Demo: Hilarious
226: Freddy Krugar Rap
227: Mindwarp Megademo Vol II
228: Robocop demo.

GRAPHICS PICCYS AND ANIMATION
300: Graphic Slideshow by The Dark Wizard
301: IFF Picture Show
304: Fish 295: Mandel Mountains
305: Lorenzo Graphic Utilities
306: Newtek Demo Reel 3 (1 Meg) (2 disks)
307: Luxo Teenager animation: (1 meg) : A very good animation of a desklamp
308: Nightbreed Slideshow by H.C.C: These are the best pics I've seen yet.
309: Forgotten Realms Slideshow by Fraxion
311: Viz Slideshow: 12 Great digitised pics fromVIZ 1990 Calendar
400: Puggs in Space by Dionysus: Great anims and Brill music.. Yeehaa
403: Agatron Slideshow: More great stuff from Tobias Richter
404: Magician & Runner: Very good
405: Agatron Anim £25: The Run (1 Meg) Could be his best yet
407: Walker 1 Animation (1 meg). Been around for a while. A classic
408: Walker 2 Animation (1 meg). Yep! You got it, another classic
412: The Education of Cool Cougar (1 meg): Brilliant
413: The Probe Sequence
414: Space Ace Demo: (1 meg) Animation Sequence from game
415: Fillet the Fish Animation by Jester Bros International

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501: Fonts Disk: Loads of fonts
502: Wordprocessor
503: Spreadsheet
504: Database
505: Ghostwriter and Rainbowriter: Intro Writers
506: Dope Intro Writer
507: Virus Killer disk

GAMES
700: Lorenzo Games Collection 1: Old faithfuls Invaders etc
701: Fish 347: Drip Game: Pure dead brilliant
702: Star Trek 3: (2 disks) :absolutely fantastic
703: Return to Earth
704: Blizzard Game
705: Monopoly
706: Star Trek (1 meg) (2 disks)
707: Paranoid: Arkanoid like game with its own screen editor.

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681: AMI-FX ISSUE 1 - Special three disk set for fractal enthusiasts. This series will be arriving on an infrequent basis. (1 MEG MIN) £5.00
699: FRANTIC FREDDIE. A C64 conversion by Bignonia Software + TWO DEMOS £2.00
700: TETRACOPY. An EXCELLENT copier program by the team that did XCOPY £2.50
705: AMIBASE PROFESSIONAL. A new Database prog. by K. Grant. (LICENCEWARE) £2.50
706: 3 NICE GAMES by PH Software. THE TURN, TRICKY AND MARBLE SLIDE £2.50
717: MUSIC DISK with 53 tracks lasting OVER 90 MINS! (A MUST) £2.00
728: THE EXCELLENT BOOT-SHOP, plus iffmaster, bootkit, diskscan etc. £2.50
740: MED V2.13. The VERY LATEST version of this FANTASTIC music utility has been re-vamped with a host of new additions, with arced samples. £2.50
741: NorthC V1.2. Updated version from Steve Hawtin, this new set comes on TWO DISKS and is packed with extra progs/examples/advice on bugs. £5.00
755: SUPER C COMMANDS DISK from Twilight (FAST REPLACEMENT C DIR PROGS) £1.50
756: PSEUDO-COP. A very hard to play PD game, very well done. £2.00
759: The FANTASTIC Crionics Auto-run demo called 'NEVERWHERE'. £1.50
760: Letter writing disk by GRIZZLY, set up and ready for your letters £1.50
790: PROFESSIONAL SOUNDTRACKER V1.0 is here!, it is EXCELLENT, just press the HELP key, whilst running, for full instructions. Disk also contains latest Ntracker V2.12, subtitled THE STARTEKKER by Exolon of Fairlight, also the FINAL version of DISKMASTER (V3), A 100% CLI REPLACEMENT TOOL. £2.50

AT LAST! HERE IS A NEW DISK THAT ALL CODERS HAVE BEEN WAITING FOR.

ACC-1/4: The first 4 compacted issues of a new disk for coders, even if you are new to the coding, it's the one to get if you intend using devpak. Advice/source and more. Edited by Mark Meany. INTRODUCTORY OFFER £1.50

OCTOBER COMPETITION ISSUE CATALOGUE DISK IS NOW AVAILABLE, YOU COULD WIN £100 WORTH OF PROGS. (3 PRIZES). SEND £1.00 AND ASK FOR YOUR COPY NOW!!

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PLEASE NOTE: Some demos contain language that may be considered offensive.

accounts to finalise. In the event of this unhappy scenario, *ST Sheet* could well be a blessing. It's a public domain spreadsheet, and a very fine one at that. A spreadsheet, by the way, is a program that can work out masses of crossed referenced mathematics in an instant.

It's ideal for those 'what-if' scenarios. It's useful for small businesses and the home alike. It'll help you work out how much you could cut the price of your range of designer anoraks by and still stay in the black. Alternatively, you could juggle some fiscal figures about and attempt to conjecture exactly how paying the poll tax is likely to affect your beer money. As with most things of this kind, it all depends on your financial imagination.

Basically the system goes like this. You have a huge work-sheet at your disposal. It's spilt up into rows and columns of individual cells. Each cell can contain text, numbers or calculations. The various functions are accessed via the menu bar which lies across the top of the screen. There are hot keys too for those who become adept at using the system.

• *Another friendly looking pet from the the slideshow There are many, many more in a similar vein.*

If you've never used a spreadsheet before then fear not. There's a chunky comprehensive manual on the disk. It's stored in archived format so you'll need to run it through the supplied de-archiver first. There's plenty of in-program help at hand too. If you get stuck then simply click on the help menu and you'll soon be set put right, it covers most forseeable faults.

There are plenty of powerful features in the program that both enhance and facilitate your usage. There's a simple programming language built in. Graphics facilities, a useful indeed necessary addition, are provided too. So you can see just how the figures will look, without having the bother of getting out the graph paper and felt pens and drawing it yourself.

And that just about sums it up.

PD News

A couple of issues ago (*Express* 99 to be precise) I told you about the amazing games collection from Capricorn Computers - called CC games 22.

Many of you where suitably impressed by the write-up and sent off your cheques to Capricorn - causing much confusion. So why was this then? Well silly me, I went and got the numbers all mixed up, grotesque imbecile that I am. It should have read Disk 336, not disk 366 as stated. Whoops and a thousand apologies!

Capricorn is located at 35 Warick Road, Olton, Solihull, West Midlands B92 7HS.■

WHERE TO GO

•Lorenzo's Domain, 30 Colquhoun Square, Helensburgh, Scotland G84 8AQ. This Amiga library has a very 'clubby' feel. Competitions are run regularly, and they aim to send out your disks within a couple of hours of receiving your order. The disks are dirt cheap too. The princely sum of 99 pence is all it costs for a disk full of delightful PD.

• Sphinx Software, Erw Fynydd, Carmel, Llanelli SA14 7SG. Sphinx have loads of stuff for your ST. Prices are fairly resonable at your standard £1.50 for a single sided disk, and £2 for double sided. What's more if you supply the disk the price plummets to just 50 pence for singles, and a quid for doubles.

GET IN TOUCH

Do you run a public domain library? If you do then we'd like to hear from you. Simply send us a sample of your software and we'll do our very best to include you in the next available PD column.

Don't worry about the fact that it's on the Sam Coupé. We cater for all tastes here, and can load virtually anything you send us.

Do make sure that you enclose all the necessary details. Instructions for the program would be helpful. Things like the name of your library, your prices and address are pretty useful too. Include your phone number in case we have a query about your software. We won't print it if you don't want us to (ie you run the library from your mum's house), but if that's the case then make sure that you state so clearly. If you have a catalogue, bung that in too.

We're always on the look-out for other PD related stuff. So next time you send something in, why not include a chart of your best selling titles, or anything newsworthy will get a look in too.

Send it to: Adam Waring's PD Column, *New Computer Express*, Future Publishing, Beauford Court, 30 Monmouth Street, Bath BA1 2BW.

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Gremlin: '**Stronger than ever**' ST Action

'**Venus sets a newer, higher standard in ST software**' ST Action

Gremlin's 8 bit Shadow of the Beast: '**An awesome achievement**' C&VG.

'Lotus Esprit Turbo Challenge has arrived, and nothing will be the same again' C&VG

Fancy working with the most consistently excellent software house around? Now's your chance. Gremlin are looking for programmers and graphic artists on all formats to join our successful in house team, who have been described as possessing 'flair, ingenuity and sheer skill' in the computer press. If you can match the impressive standards that Gremlin expects, we want to hear from you. We can offer excellent salaries, brilliant working conditions in our new offices, and a Ferrari for anyone replying within a week.* We are also interested in developing freelance projects with experienced or new development teams. If you are interested in working for a company that prides itself on quality before quantity, then contact James North-Hearn or Sean Kelly at:

Gremlin Graphics, Carver House, 2-4 Carver Street, Sheffield, South Yorkshire. S1 4FS. Telephone 0742 753 423.

* The Ferrari bit isn't strictly true. It isn't even slightly true. Actually, it's a lie. Sorry about the duff design, but we concentrate on quality games, not adverts.

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Mark Higham's GAMES WEEK

Christmas is coming. That can mean only one thing – the licence merry-go-round is spinning faster than ever. This year many of the smaller companies are also picking up attractive licence deals to compete with the big boys. US Gold and Ocean still have their *ESWATs* and *Robocops* but the small fry's hitting back hard. Entertainment International has both *Spiderman* and *Dick Tracy* in its grasp, not to mention a Gazza title.

UBI Soft has scooped the *Ranx Xerox* French comic strip hero and is coming up with a sex game; Software Business is distributing *Hagar the Horrible;* and Virgin is still preparing a *Judge Dredd* game in time for Christmas.

THE 16-BIT TOP TEN

For the week ending September 29

Game name	Publisher	Format
1 *Targhan*	ACTION 16	ST/Ag/PC
2 *Yogi's Great Escape*	HITEC	ST/AG
3 *Kick Off 2*	ANCO	ST/Ag
4 *Guardian Angel*	CODEMASTER	ST/Ag
5 *Treasure Island Dizzy*	CODEMASTERS	ST/Ag
6 *Battle Of Britain*	USGOLD	ST/Ag/PC
7 *Fast Lane*	ACTION 16	ST/Ag
8 *Pro Tennis Sim*	CODE MASTERS	ST/Ag
9 *F19 Stealth Fighter*	MICRPROSE	ST/PC
10 *Shadow Warriors*	OCEAN	ST/Ag

Personally I doubt we'll see many of them becoming classics. The word is that *Dredd* will be little more than a hackneyed platform game; *Gazza* is unlikely to compete with *Kick Off 2* and no one expects much from *Dick Tracy* or *Spiderman*. Still, if we're prepared to buy games because they have a familiar name, we deserve all we get.

ON A DOWNHILL SLOPE?

Over the last few months rumours have abounded that Activision is about to close. It now seems that a small team of less than ten people will survive to produce a limited selection of console and 16-bit games.

Activision as we know it is going to go out with a bang. *Dragon Breed, Atomic Robokid* and *Spindizzy Worlds* are all scheduled to appear before you buy your Xmas turkey. *Dragon Breed* is an arcade conversion featuring some enormous sprites in pure shoot-'em-up action, as is *Atomic Robokid*, while *Spindizzy Worlds* is the follow-up to the classic *Spindizzy*.

After Christmas Activision is releasing *Deuteros,* the follow-up to *Millennium 2.2.* . The game is set far in the future after the end of *Millennium 2.2.* Space research stations have been abandoned and it's up to you to re-establish them.

In such a short space it's impossible to convey the magic of the game. When you get involved in it you realise *Deuteros* is absolutely enormous – far bigger and better than *Millennium 2.2,* with ten times more animation. *Deuteros* won't be around for a while but if you're a lover of intense games then you will love it. ■

PLAYING TIPS: Conquering Conqueror

CONQUEROR • Rainbows

If you're still beavering away with *Conqueror* then here are some tips to make sure you can complete those manic missions. Put your tank in gear, push your foot to the floor and prepare for action!

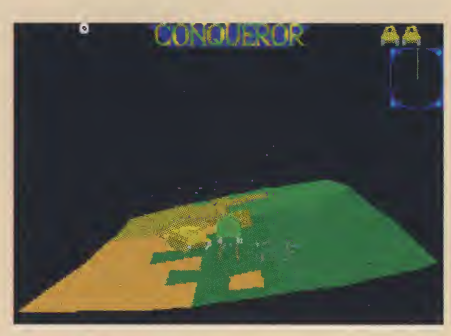
■ When choosing your tanks try to come up with a balanced force. Light tanks are useful for reconnaisance and also as an emergency reserve. Heavy tanks are good at some brutal conflict with the enemy. Medium tanks combine the virtues of both but tend to be lacking in firepower and speed.

■ German tanks are worse at hill-climbing than either American or Russian tanks. If you play the German side, try and sit at the top of hills so you can rush down to your opponent. If you're playing the Allies then a useful tactic is to run away by going for the steepest hill.

■ *Conqueror* calculates the angle of incidence of any shot fired and uses this to work out the effective armour. Thus an oblique shot has more armour to penetrate than a square-on shot.

• *Arrange your force so that you have the right balance of light and heavy tanks.*

■ Front armour is the best on all tanks so present this to the enemy. Equally, always try and go for the enemy's flank or rear when shooting.



• *Dash up hill to dodge the German tanks.*

■ A sensible tactic is to form heavy tanks into groups and leave the light tanks to reconnoitre. This means the light tanks (which can travel faster) act as the 'eyes' of your force. Their standard tactics (when under auto-driver) are to run away from anything they cannot shoot and so they're ideal, as they will just report any sighting and it is up to you to direct a nearby group of heavy tanks to deal with the situation.

■ When using map fire don't forget that the shells take about 30 seconds to hit. So try and predict where the enemy forces will be at that time. Computer-controlled tanks don't look for map fire so, you must stay clear of the target area until you're sure the shells have landed.

■ Don't forget your drone tanks. Direct one to hold an enemy tank's attention while driving your tank to the rear of the enemy and shooting.

GAME REVIEW

VAXINE

US GOLD • ST, Amiga – £24.99 • PC – £34.99

After writing the all-time whackiest game and giving it the eccentric title of *E-motion*, The Assembly Line has now turned its attentions to more kaleidoscopic mayhem. The result is *Vaxine* – guaranteed to be like nothing you've ever seen before.

Load up the game, start moving the mouse around and the first thing to hit you is the speed at which the screen moves. The floor of each level (and occasionally the ceiling) is made of coloured tiles. If you move the mouse even slightly, the tiles race off the edge of the screen faster than you can blink.

***Vaxine* is set inside a human body which is under attack from invading cells. The idea is to rid the body of these destructive cells using the only ammo you have at hand – coloured balls. The particular cells you need to protect are glued to the floor of the level. Enemy cells are represented as coloured balls and these sit on top of your healthy cells, slowly destroying them. The idea is to race round the level, seeking out these enemy cells and blasting them with a ball of the same colour. Since the enemy cells bounce up and down and race off the screen at a ridiculously fast rate, you need to aim carefully and quickly to destroy them. Some of the invading cells are connected by long strings and you must destroy all the cells in such a cluster to wipe them out.**

When you've cleared one level of invading cells you're through to the next. This time the enemy cells start to invade your healthy cells at a quicker rate. Get that mouse moving fast and blast every ball you can spot.

The visuals alone are enough to keep you absorbed in *Vaxine*. The speed at which everything moves with just the slightest twitch of the mouse is incredible. However, the gameplay is what really matters. When you first start playing you realise that lining yourself up to blast the bouncing enemy cells is the hardest task you face. When you've eventually mastered the technique you can start ploughing through the levels at speed. Then you realise that, though *Vaxine* is certainly a unique challenge, the levels just don't have enough variety to keep you addicted into the early hours.

THE CONSOLE ZONE

Your weekly guide to console gaming with Richard Frederick.

SEGA MEGADRIVE

Hellfire is the latest shoot-'em-up to hit the Megadrive. This four-megabit cartridge from NCS/Toaplan in Japan is a single-player scrolling blast-'em-to-death with simple colourful graphics. It cost 6,800 yen (£27).

PLAYING TIP
Learn new songs in *Phantasy Star II* by regularly visiting Ustedevich in Oputa.

Don't forget we want your Megadrive game hints and cheats. Send them to the normal address, or fax on 0225 446019.

NINTENDO ENTERTAINMENT SYSTEM

A classic computer role-playing game is now available on the NES, courtesy of FCI.

"*The Bard's Tale* gives a new twist to role-playing by introducing the Bard, a wandering minstrel, whose songs have devastating effects on his enemies," states FCI, "the three dimensional scrolling map and clear graphics place this game on the cutting edge of role-playing games."

The Bard's Tale features a seven member party with six active characters, 16 maze levels, 43 spells in two classes of magic, mad dogs, dragons, orcs, ninjas, warriors and wizards. FCI adds, "With *The Bard's Tale*, the magic is in the music!"

PLAYING TIP
Complete any *Thunderbirds* level by pausing the game and pressing [Upper Left], then simultaneously holding down [Button A], [Button B] and [Select].

NEC PC ENGINE PLAYING TIP

Select any *Splatterhouse* stage by pressing [Select] three times when the house and lightning are on-screen. Then hold down [Left] and [Run].

HI-SCORERS

So you think you're good, eh? Send us your scores on your favourite games for the Megadrive, Gameboy, Sega Master, NES, PC Engine, Lynx and Neo-Geo to: The Console Zone, *Express*, Future Publishing, 30 Monmouth Street, Bath BA1 2BW – or fax 0225 446019.

GAMEBOY		
Super Mario Land	331,860	AlexTaylor
Tetris	115,998	Michael O'Brien
MEGADRIVE		
DJ Boy	3,531,300	Alex Taylor
Eswat	277,900	Alex Taylor
Final Blow	2,525,040	Alex Taylor
Forgotten World	653,900	Alex Taylor
Ghouls 'n' Ghosts	102,400	Alex Taylor
Golden Axe	414.5	Alex Taylor
Super Shinobi	1,968,500	Alex Taylor
Thunderforce	2,429,100	Alex Taylor

HARDWIRED FOR SOUND

What are Japanese nightclubbers dancing to in their local funspots? 'He's Gonna Step On You Again' by the Happy Mondays? No way. Madonna's 'Express Yourself?' Possibly. Remixes of video game and coin-op soundtracks? Absolutely! It seems the latest craze in the land of the rising sun is remixes of your favourite Japanese video games on compact disc.

The list of titles available is seemingly endless and includes arranged CD versions of Irem's *R-Type*; Namco's *Winning Run*, *Splatter House*, *Phelios* and *Metal Hawk*; SNK's *Time Soldiers*; Taito's *Arkanoid*, *Tiger Heli*, *Rastansaga*, *Darius* and *Midnight Landing*; Sega's *Galaxy Force*, *Space Harrier*, *Shinobi*, *Afterburner*, *Super Monaco GP*, *Outrun* and *Thunderblade*; Nichibutsu's *Moon Cresta*, *Crazy Climber*, *Mag Max*, *Terra Cresta*, *Galavan*, *Mighty Guy*, *Amateless*, *Danger*, *Bobby Kids*, *Legion* and *Terra Force*; Konami's *Gradius* (*Nemesis*); Technos' *Double Dragon* (incorporating the female vocal version of *Dead or Alive*).

That's not all! You can also buy a ten-track Tetris CD (*Toroika '90*, *Karinka*, *Hawker's Song*, *Technotorios*, *Northern countries mambo*, *First Division*, *Hero's Competition*, *Neddlewoman*, *Las Tonicflood* and *Ode*) and music from various Gameboy titles such as Super Mario Land, Golf, Tetris and Solar Striker.

These audio CD's cost between 2,500 and 3,000 yen (£10-12). Yuzo Koshiro is apparently the 'MC Hammer' of video game remixes, with a whole list of CDs to his credit, including 'The Super Shinobi & Works' featuring *Round Clear*, *Ninja Step*, *Blast Power*, *Flash Flash Flash* and *Asteroid Memory* tracks.

NINTENDO GAMEBOY

To cash-in on its American popularity, there are now several baseball games available on the *Gameboy*. Namco has one costing 3,500 yen (£14) while *Pocket Stadium* from Atlus is a 'unique baseball simulation', where the player is in charge of managing one of 12 pre-programmed teams. Each player has his own stats – batting average and home runs for the batters and ERAs for the pitchers. In the batting half of the game, you tell the batter how fast to swing his bat and where to aim for in the strike zone, the rest is decided by where the pitcher pitches and the batter's own ability to hit the ball. Similarly, you tell the pitcher what pitch to throw and where in the strike zone. Each pitcher has his own set of pitches, ranging from a fastball to a slider. As you can probably guess, *Pocket Stadium* is a strategic sports-sim. It costs 3,300 yen (£13).

PLAYING TIP
To defeat the Abobo boss in *Double Dragon*, approach him at an angle and punch his lights out with a quick succession of well-aimed punches. Never tackle him head-on.

Don't forget, we need your *Gameboy* game tips and cheats. Send them to us at the normal address or fax 0225 446019.

ATARI LYNX PLAYING TIP

Here are the *Chip's Challenge* passcodes 25-50:

25: PQGV
26: YVYJ
27: IGGZ
28: UJDD
29: QGOL
30: BQZP
31: RYMS
32: PEFS
33: BQSN
34: NQFI
35: VDTM
36: NXIS
37: VQNK
38: BIFA
39: ICXY
40: YWFH
41: GKWZ
42: LMFU
43: UJDP
44: TXHL
45: OVPZ
46: HDQJ
47: LXPP
48: JYSF
49: PPXI
50: QBDH

SEGA MASTER SYSTEM

Domark, the classy British computer games firm, has just announced a third party licensing deal with Sega to produce a series of games on the Master System. The new titles have yet to be announced. Domark has previously released *Trivial Pursuit*, *James Bond* games and *Tengen* coin-op conversions on computer format.

"Over the last two years Domark has proved itself as being a creative, dynamic and reliable software house," says Mr Nobuhiko Ishihara, General Manager of Sega Europe. More details as we get them.

PLAYING TIP
Select any *Enduro Racer* round by pressing [Reset] on the title screen, then [Up], [Down], [Left] and [Right].

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ATARI Portfolio

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The new Portfolio from Atari is the world's first pocket-sized electronic organiser that is also a powerful PC compatible computer, with a full QWERTY keyboard and scrolling 80×25 character display.

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Portfolio also includes several functions that you would not expect - a spreadsheet for your personal budget and expense records, as well as a text processor for typing memos and letters.

And, because Atari's Portfolio is PC compatible, it can communicate with your desktop PC at home, or in the office. You can transfer files from one to the other, to enable you to update your reports and figures with the Portfolio while you are on the move.

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SPECIFICATION

- ★ ***Processor:*** Intel 80C88 at 4.9152Mhz.
- ★ ***Operating System:*** Compatible with MS-DOS 2.11.
- ★ ***Internal ROM:*** 256K containing BIOS, operating system and applications suite.
- ★ ***RAM:*** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
- ★ ***Keyboard:*** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- ★ ***Character Set:*** Extended IBM ASCII (255 characters).
- ★ ***Mass storage:*** credit card sized memory cards (32K or 64K or 128K RAM).
- ★ ***Display:*** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
- ★ ***Peripherals:*** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
- ★ ***Size:*** 8" x 4" x 1" (200mm x 105mm x 29mm).
- ★ ***Weight:*** 495 grammes (with batteries).
- ★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

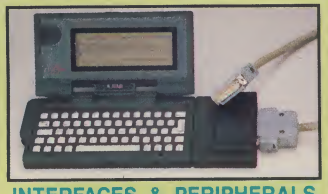
For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.

POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.



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Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

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LET'S TALK MIDI

Everyone with a musical bone in their body seems to have gone MIDI mad. Keith Pomfret looks at some of the affordable pieces of kit available in the high street.

Ten years ago when music started its painful transition from analogue to digital, Japanese and American companies got together to create a standard way for musical instruments to communicate with each other. Professional musicians were able to grasp at MIDI, but it's only recently that MIDI instruments have become cheap enough to make computerised music a realistic home hobby.

Reams of articles have been written about which MIDI package is the best for which computer and how the various computers perform as studio sequencers, synthesiser programming devices and composition tools. Here, we've looked at the home as the basis for a MIDI 'hobby' set up. But first you'll need to make your computer talk MIDI.

The Atari ST already has MIDI ports, the PC needs a MIDI interface card and all the rest need a MIDI interface module. Once you have the magic interface attached, you'll need software. For a simple MIDI studio, it's a good idea to start with a sequencer. This works like a multi-track recording studio only it records data, not music.

Once you've got the software and attached the interface it's up to you to decide what instruments to plug in. It's not necessary to spend a fortune on a stage quality synthesiser. You can get quite a lot for a little.

SIZE ISN'T EVERYTHING

The first thing is to find out what you need. As with all things musical, it's necessary to define what sounds are required and what extras in the way of features and accompaniment.

The first big decision has to be the size of the keyboard. In the main, there are two sizes. The full sized piano/organ keyboard matches a standard piano and anyone who can already play will probably take this route.The slightly smaller accordion-sized keyboard may look a better bet for little fingers if the kids are to play too, but little fingers grow and the traditional school of thought maintains that a full sized keyboard is a necessity.

Someone with big stumpy fingers (like mine) will find the smaller keyboard clumsy and difficult so be sure to try before you buy. If the keyboard's comfortable, you can think about what sounds you require. Most of the affordable keyboards are of a kind known as a preset synthesiser.

PRESET SOUNDS

A preset synthesiser is an instrument that makes (synthesises) sounds artificially, but all of the 'made' sounds are preset. There may be a piano, organ, strings and harpsichord. The point of a preset synth is that the sounds are not editable by the user. The piano sound you get is the one that you play. Changes of sound and tone can only be made by picking another instrument. Preset synths can have any number of preset sounds.

A simple preset synth such as the Casio CPS-700 only has five presets and is effectively an electric piano with harpsichord, vibes and a rudimentary pipe organ. The quality of the sounds is good and the six octave full sized keyboard is touch sensitive.

At the other end of the preset spectrum are instruments like the Yamaha PSS and PSR series. These instruments offer many preset sounds and 100 plus different preset voices isn't unusual. Some of the better specified ones offer some degree of editing, but in real terms, they are at their best playing back their preset voices.

SOLO OR ENSEMBLE

Once you've decided whether to be a pianist or a multi-orchestral player, you've got some more decisions to make. Because MIDI can operate on 16 discrete channels, if you intend to use your keyboard as the core of a computer controlled studio and want to be able to hear several sounds at once, you'll need a multi-timbral setup.

Synthesisers can play several notes at once, but on occasions it is desirable to be able to play back different sounds together. If a synthesiser is 16 note polyphonic, you can press 16 keys at a time and hear 16 notes. On a simple synthesiser, if you were to use the organ preset, you could play up to 16 organ notes and not much else beside. On a multi-timbral instrument you can assign different preset voices to different channels and mix and match them.

LIVING ROOM ORCHESTRA

On a sixteen note polyphonic multi-timbral synth you might assign four notes to a piano accompaniment on channel two, four notes to a string ensemble on channel three, one note to an electric bass on channel four, three notes to a brass section on channel zero and the remaining four notes to percussion. You could use a computer to drive all of the channels or assign one to the keyboard and play along with the rest of the computer driven tracks.

As well as the chance to let MIDI do all of the work, some keyboards come with auto accompaniment sections. These can be broken down into two main sections – musical and percussion. The percussion accompaniment will generally be some sort of pre-determined rhythm such as rock, samba, 16 bar, etc. These rhythms will provide a percussive accompaniment in the style of your choice, sometimes with starts, ends and fills, and the more clever ones will change the makeup of the rhythms from bar to bar.

The musical accompaniment can be a simple device that picks out a bass line or provides a chorded accompaniment from playing a single note to a full blown orchestral section. Drums, bass, orchestral backdrops and tune following are some of the features offered on a few of the more expensive keyboards.

From then, it's a matter of taste. Some keyboards do whizzy demos. Others offer auto accompaniment and rhythm. Don't be baffled with science. Be sure that you get the features that you consider desirable and not that you go down the road of buying a synth because it has every possible extra.

ON TEST

We grabbed a few boxes of synths and set them up in the *Express* office to put them through their paces. Colleagues who had never been heard to even whisle became Semprinis overnight. A passing administrator turned out to have a touch of the Claydermans and even a high-powered ad executive was seen to nod musical approval. After a couple of weeks of symphonic cacophony, this is what we thought.

ELECTRIC PIANO PLUS

First on to the test bench was the Casio CPS-700. This 6.5 octave black box looked a little austere compared with the other keyboards on test. A full sized and almost full length piano keyboard made this beast reach from the filing cabinet to the coffee machine. The main panel doesn't boast many controls. The CPS-700 claims only to be a digital electronic piano, but the MIDI ports on the back and a couple of interesting presets give it synthesiser status.

Unlike many of the keyboards available, the CPS-700 attempts to be a reasonable copy of a traditional instrument. The full sized over-long keyboard seems to stretch forever compared with the accordion style models. The keys are square fronted and shaped like traditional piano keys.

Your choice of sounds is limited to five presets. They are Piano, Harpsichord, Vibraphone, electric Piano and Pipe Organ. The piano sound is pure upright piano and must be the result of sampling the real thing. In true piano style, the notes sound louder the harder you hit them and by careful tinkling, these ivories (shouldn't that be plastics? – Ed) can provide a true representation of the piano sound with all the crescendo and live dynamics of the real thing.

A demo button shows the CPS-700 to be a worthy contender for space in a house or flat where there's no room for a proper piano. The harpsichord is tinny and although it has the metallic plucked sound of its prototype, loses all of the real instruments dynamics by the fact that there is no sensitivity control. The vibraphone preset demands a delicate bouncing touch and when played that way offers a true jazz sound.

The electric piano is a little on the spacy side with a slightly out of tune out of phase feel that I found annoying, but was outvoted on by my colleagues.

Finally, the pipe organ was a let down. A thin reedy sound with none of the pomp and majesty of the real thing. Toccata and Fugue lacked depth even through external amplification.

The rear panel contains a socket for mains power. The CPS-700 runs from a mains power pack or batteries making it totally portable. A line out socket for a 1/4 inch jack plug allows it to take advantage of external amplification and a similar socket takes a damper pedal a la piano for further expressive playing. A turret control allows fine tuning of the instrument allowing tuning to other instruments. Finally, MIDI in and MIDI out connect the CPS-700 to the rest of your MIDI kit or your computer. The front panel revealed a sensibly placed headphone socket.

At the end of the day, the demo was left on to attempt savage beast soothing. The demo is almost a recital. Yard after yard of manuscript passed digitally to the speakers.

For all of my complaints about the organ, the lovely piano makes it worth its weight in MIDI cables. For my money, the simplicity, full sized touch sensitive keys and built in stereo speakers make it a good base unit for a MIDI studio.

The Casio CPS 700 costs £499.

WHAT IS MIDI

MIDI is an internationally accepted set of rules that allows computers, MIDI instruments, expanders, and even recording equipment can communicate with each other. The MIDI data is carried along standard 5pin DIN-DIN cables.so no complicated cables ar necessary.

MIDI works like the serial port of a computer, sending data along a serial link in a format that any MIDI equipped instrument or computer can decode and use. The MIDI data is carried at the zippy speed of 31.5k Baud. As MIDI has 16 channels, it's possible to have several different instruments assigned to a different channel each and use a computer or sequencer to send different data to each assigned channel. This way a single computer controlled by one person can play a complete orchestra or band.

To check if your keyboard, synth or instrument is MIDI equipped, check the outputs panel at the rear. There should be 5 pin DIN sockets marked IN, OUT, and THRU. Some cheaper keyboards only have IN and OUT implimented. (Some of the odder instruments such as MIDI guitars only have MIDI out .)

MULTI VOICE SYNTH

Staying with Casio, it was difficult to pick a suitable test instrument in the multi-preset department so we looked at several. All of the instruments available were capable of running from batteries or mains so the first hurdle that we arrived at was again the accordion or piano keyboard.

To give a true balance we settled on the MT750, an accordion sized 5 octave keyboards with more prominent features than Sam Fox

This mighty midget (the keyboard, not Sam Fox !) had connectors for the mains power unit, amplifiers and a full compliment of MIDI ports. A turret tuner was included and a headphone socket was there to take some of the strain off the neighbours.

Standard charcoal grey on the front panel covered a couple of stereo speakers at the ends and several panels of controls. A pitch bend wheel is included on the left of the keyboard and the obligatory demo button gives you a taste of what you wish you could play.

There's a full control section allowing you to vary the volume of the rhythm, accompaniment and main sections and a selector allows you to choose the type of accompaniment or select the external MIDI codes.

The orchestral and percussion accompaniment built into the MT-750 contains various features to allow variations to the way the musical and percussive backing is laid out. One touch buttons allow intros, fills, breaks, endings and codas to be dropped in to the live performance.

A tone editor allows some very basic editing of the sound envelope shapes. But this machine gains most from the sheer multitude of voices and accompaniments available. 110 sets in the beat bank divided into subgroups of Rock, Pops, Jazz Classic, Latin Disco and others.

The instrumental bank is even bigger with a possible 220 tones divided into 16 sub groups covering every section of the musical spectrum and some that aren't even musical.

The MT-750 is easy to use and despite the small keys, even the most un-musical among us was making melodic sounds in a few minutes. With all of the clever automatic accompaniments switched off and the MIDI ports brought into play, the MT-750 showed another

side of its character as a well behaved module in a MIDI set up. Driven by an expensive 386PC, the MT-750 fell in with the LAPC1 sound card resident in the PC and assigning different voices to the Casio and the sound card brought a veritable orchestra tumbling out of the office hi-fi.

A good value preset synthesiser with enough features to keep an old hand potty trained on a pipe organ happy.

The Casio MT750 costs £199.99.

WHAT, NO KICKSTART?

Yamaha came under the microscope next with the PSS 790 sitting atop the *Express* bench.

The PSS 790 has accordian keys with an unusual arrangement of touch sensitive drum pads below the keyboard. Built in Stereo speakers carry the sounds and a performance wheel controls pitch bend. The rear panel has a power pack power input, a headphone/line out socket and a full set of MIDI ports. Battery and mains use are supported making it portable enough to play anywhere.

The features include 100 voices, 50 rhythms, auto accompaniment, full MIDI implementation and a multi-timbral mode.

A built in sequencer allows the simple 8 line sequencing of songs giving a simple multitracking facility although it must be said that this sequencer doesn't compare with some of the high powered sequencers found in the higher level professional equiopment such as the Yamaha SY series.

The PSS-790 has all of the accompaniment and percussion modes of the Casio described above and although it doesn't have as many voices or percussion rhythms as the Casio, it makes up for itself with the full multitymbral mode that allows an ensemble of multiple parts to be constructed and played back using MIDI control.

Again, a pleasant box of tricks at a price that can be afforded. It blended well with the other instruments and was simple to control from a computer, fitting in nicely with the PC sound card.

The Yamaha PSS 790 costs £229.99.

HEART'S DESIRE

Let's take a look at one of the keyboards that a professional musician might use and see what you get. The Yamaha SY55 falls in the £1,000-£1,500 price range and is a completely programmable synthesiser with a built in sequencer, sound editor and a full velocity-sensitive keyboard with after touch.

Simply, this means that the sounds that it can make are all 'soft' and you can start from scratch and build a sound from the available waveforms, amplifiers, filters and oscillators or you can take an existing preset sound or voice and tailor it to your own needs. When you have the sound that you want, you can further build on it by the addition of performance controls.

These could add say vibrato like modulation to an instrumental solo or control the degree with which the loudness increases with the velocity that the key is struck.

The SY55 is multi-timbral too, so more than one voice can be played at the same time. Playing live, this is limited by the manual dexterity of the musician, but using a computer to control the SY55 and assigning different MIDI channels to different voices means that you can attain a full orchestral effect from a single instrument.

A full set of percussion instruments and drums are available as a preset on the SY55 so surprisingly life-like orchestras and bands can be assembled. The three internal demonstration routines provide an atmospheric, orchestral, pop, rock and even jazz-like intro to the machine's capabilities.

The true MIDI implementation of the SY55 allows it to be the central tone and live control module for live performance. Allied to a computer it becomes the basic unit of a MIDI studio and its control parameters make it a powerful and desirable piece of kit for a professional musician.

Like most keyboards, it suffers from a small display in which to edit all of its functions. This isn't a problem with some of the cheaper, more rigidly programmed synths, where a simple yes/no decision is the limit of the programming requirements.

With a machine like the SY55 however, where parameters run into the hundreds, a computer to do the editing, and for that matter the sequencing, is desirable if not necessary. The on-screen display showing all of the main functions offers a better overall visual picture. Keyboards vary in price from place to place, but a local stockist gave these prices for the Yamaha SY range.

Yamaha SY22	£799
Yamaha SY55	£1,099
Yamaha SY77	£1,999

THE PRICE OF PLAYING

There's no hard and fast rule as to what you can expect to pay for a MIDI instrument. The dark recesses of high street chains have given up the occasional end of line MIDI keyboard for £50 or so but a more realistic price range is £100-£500.

For £100 you'll get an adequate machine, probably with an accordion sized keyboard and limited features. £500 will buy a home synth of good enough quality to take out and play professionally although a true pro would probably be looking for the voice quality and features found on the Yamaha SY series.

If you want an instrument for your home enjoyment and you aren't too bothered that it is state of the art, look for end of line bargains. Whatever you buy will remain MIDI compatible and even if you upgrade at a later date. Your existing keyboard can remain a part of things using those magic MIDI leads.

YOUR COMPUTER

If you own an Atari ST, there are already MIDI ports built in. Otherwise it's an interface (or a card if you've a PC) to get your machine talking MIDI. You'll also need some software to drive your equipment or edit sounds. Keep scanning the pages for your machine to keep up with new innovations. ■

The Instruments we tested were kindly loaned by Yamaha, (SY55) Tandy, (All the other Yamahas) Roland (the LAPC1 PC soundcard and MIDI interface) and Casio (All the Casio synthesisers and a rather nice Casio MIDI guitar which will be making a appearance in a forthcoming feature).

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SAMPLED DELIGHTS

Andy Hutchinson makes music (or rather borrows other people's) with an amazing new sound sampler. Pro-Series 12 includes just about all you need, so go out there and plagiarise!

Two-Bit systems is a company which has been active in the world of ST samplers from the outset. Its ST Replay sampler reputedly sold over 15,000 units world-wide in just three years. The company decided that it would bring their expertise to a serious sampling system which would bridge the gap between professional and home ST users. The result is the Pro-Series 12 sampler.

THE HARDWARE

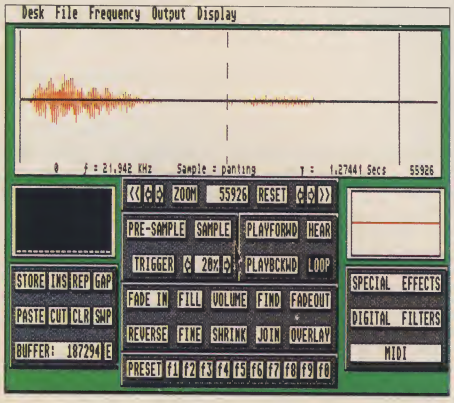
The cartridge is large and has a very well designed feel to it. None of this dodgy plastic add-on look, the sampler feels like a professional piece of kit and its technical credits reinforce this.

The technical specifications on the sampler cartridge are very impressive. Input resolution is 12 bits while output is 14-bit. The band width covers 20 Hz through to 12 kHz. The input signal to noise ratio is a very respectable 70 – 72 dBs and the maximum sample frequency is greater than 100 kHz. The side of the cartridge includes input and output phono sockets and a volume level control. The sampler has its own power source which comes with a nice long lead.

THE SOFTWARE

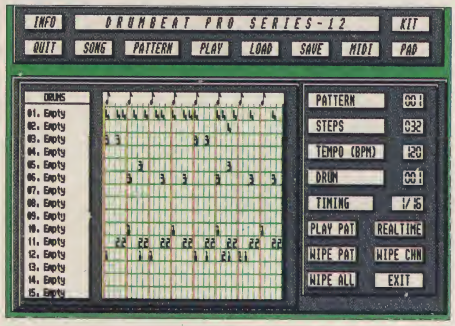
The excellent hardware specification of the cartridge is more than backed up by the well designed software which accompanies it. The software comes on five disks and includes an editor, a drum machine program, a midiplay module and a disk each of example songs and samples.

The sample editor is very well featured. The top portion of the screen display is taken up by a graphical display of the sample. Beneath this, on the extreme left and right sides of the screen are a spectrum analyser and an oscilloscope. The spectrum analyser shows sample input in the graphic form of a constantly updated bar graph, while the oscilloscope is a traditional wave form display.



• *Captive sample on screen.*

Most of the editor's functions are accessible from the front end graphical display. Sample record, playback (forward or reverse), trigger, loop, zoom and reset functions occupy the central portion. Beneath this are some of the sample control functions. Fade-ins, fills, shrinks and fills can all be carried out on the sample from here. Under the spectrum analyser are the various physical sample editing functions which enable you to cut and paste portions of samples around the sample edit window. Icons below the oscilloscope display enable you to access the special effects, digital filters and MIDI sections of the editor.



• *Organising a roll on the drums is as simple as 1 2 3.*

The cartridge can sample at 5.5, 8, 11, 16, 22, 32, 44 and 48 kHz. The last two frequencies are better than a CD player and up to the same rate as a digital audio tape recorder. Obviously the size of a sample rests on the frequency and the amount of available memory. On a 520 STFM five seconds can be sampled at 22 kHz, while on a 1040 this goes up to 17 seconds at the same frequency. If you're lucky enough to own a Mega 4 then a full 88 seconds of 22 khz can be sampled into memory.

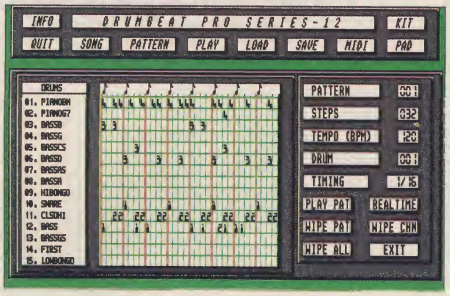
Editing of samples is very quick and easy. The sample window contains three cursors: the lower edit, the upper edit and the ghost cursor. The lower and upper edit cursors mark the area in which functions are performed. The ghost cursor's position varies depending on where the sample playing had reached. This means that if you stop a sample halfway through, its ghost cursor is positioned in the middle of the sample and thus particular sections can quickly be located and edited.

Once a portion of sample has been located this can then be copied or cut and pasted to another section of the edit window. An impressive array of special effects can be used to get the sample sounding just the way you want it to. For example, the sample can be made to sound as if it was made in a hall or in a room. Other effects include echo, reverb, chorus, flange, ramp and pitch. Digital filtering can be used on the sample so that certain sections can be electronically boosted, have the bass pumped up or the hiss removed.

To aid you in the actual business of working on the sample a large 3-D frequency content graph can be displayed on the screen. Once activated, this accessory enables you to visualise the sound much more clearly than is possible with a simple two-dimensional display. Furthermore it also gives a total view of the sound, showing any small defects which may have escaped your attention so you can put them right before you proceed any further .

THE DRUM MACHINE

The Drumbeat editor is a drum machine which matches most professional pieces of kit. Drum samples can be loaded into memory and played back four at a time in realtime. Songs or patterns can be loaded and saved and drums can be played in realtime. Moreover, complete drum kits can be saved to disk, in order that different sounds can quickly and easily be loaded and used.



• *Or how about a tinkle on the piano or seven, and why not pump up the bass while you're at it?*

MIDIPLAY

The midiplay program is a keyboard emulation program which enables sounds created in the sampler to be played back via a MIDI keyboard. Particular voices can be assigned to a specific key and the volume and tuning of the samples can be edited. A graphical display on the screen shows the sample being played or the various key/sample definitions. There are four MIDI modes available. These enable you to play back either four voices of the same sample on the keyboard; one voice of each of four samples; four samples assigned to the four most recently played keys; or to have four voices assigned to four different MIDI channels.

VERDICT

The Pro-Series 12 sampler is a superb piece of equipment. Everything about the cartridge echoes the professionalism of the software used to control it. The sampler is a serious effort at bringing professional needs to the home user, although it would be equally at home in a professional recording studio. The high price range is more than justified when you consider just what you're getting for your money - only thing is you may have to borrow money to borrow sound! ■

Pro-series 12 costs £245 and is available from AVR on 0582 457348.

EDITING MADE EASY

Tim Smith shows you how to be stylish without trying too hard. How to say what you mean without breaking any laws (of grammar, that is). And simply how to get it right.

It may be a cliche but it's true; writers are as diverse as the subjects about which they write. You wouldn't expect Stephen King to pen in the same way as Salman Rushdie would you? The idea that Charles Dickens could have been as critically acclaimed as he was had he created Noddy is laughable. So how come software manufacturers think that they can create 'style checkers' to which we are all supposed to adhere?

The concept of the Style-checker stems from three basic premises; the fountainhead is the ubiquitous spellchecker, you know that piece of software which turns a sentence like "Bernie zipped from Crewe to Lewes in his Capri" into "Perrier zipped from Screwy to Lease in his Caper". Another point is English grammar, now becoming fashionable once again. The final factor in the rise of the style-checker is that large companies in the United States, and now in this country, actually demand guidelines for their corporate documents which can be adhered to more closely than a duckling to its mother's down. Style checking is not a mere pedantic frippery in the business world, it's deathly serious stuff.

Style-checkers as a genre are knocked down, packaged-up and are well-aimed English teachers in full marking mode with no mercy.

Take, for example *Grammatik IV*. Thankfully this citizen of the US software world has been ported over to a true English version. Now, admittedly English grammar and American grammar have no perceivable differences; split infinitives are still split, incorrect verb usages are still incorrect, and improperly used possessive pronouns remain, well, wrong.

Unlike its previous incarnations *Grammatik* does not treat you like a silly schoolchild. Gone are the old days of this genre when the style-checker became the editor and would attempt to utterly homogenize your written work. It is more subtle than that now.

Getting the thing running can be a bit of a pain without a hard disk. Being more than one megabyte in size, attempting to use it from floppy is basically a non-starter. Once the program has been installed on a word processing directory, the experienced user can work straight from the command line. This entails calling it up to give a run through of your text. This method does call for your grasp of the English language to be as good as that of *Grammatiks* as it merely highlights mistakes and allows you to make the changes. So, if a sentence such as "He planned to searingly indict the misuse of toy-towns police powers" was highlighted all you get are two messages telling you what the mistakes are but not, why they are mistakes. For those of you who still don't know, there's a split infinitive, and a missing possessive and that's gospel.

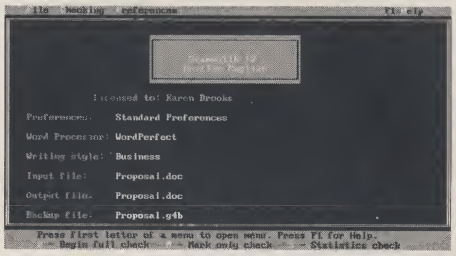
The other, more helpful mode is buzzword city itself; interactive mode. Don't get this wrong. Interactive does not mean that your PC wil cough politely and ask whether you actually have any grasp of your mother tongue. Nope, it simply brings messages up on the screen which explain just why you made those stupid mistakes. The sentence I have just used would call-up authoritative statements as to why an infinitive should never be split. According to gurus Fowler and Eric Partridge in Useage and Abusage the separation of 'to' from its infintive isn't the henious crime that many would have you believe. *Grammatik* takes it lead from just such stars of the linguistic universe and can be quite flexible on subjects such as split. When it comes to dropping the possessive from 'toytown's' however, there is no way out, you are just plain wrong and are told as much.

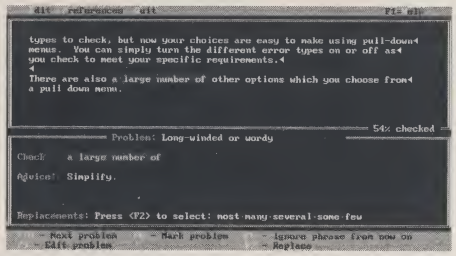
Well, that would be the case if it weren't for the Rule Editor which comes with the system. This is handy as heck for anyone who has to write in more than one style regularly - and face it, that's most of us. After all you wouldn't write to your lover in the same way as you would write to the local council's Poll Tax (sorry Community Charge) office would you? And I certainly wouldn't write a news feature for *Express* in the same way as my column for *The Times* (the Twyford Times).

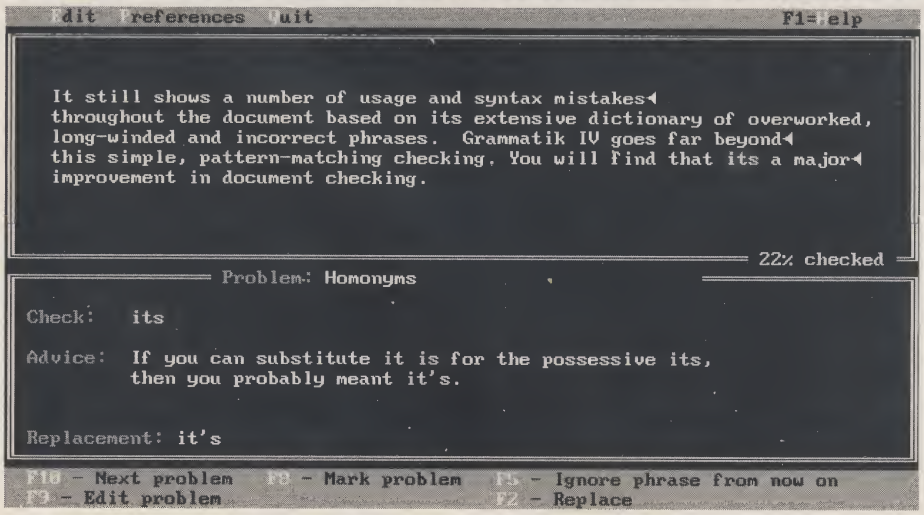
The Rules Editor will allow you to have certain laws turned on or off from the main checking routine. But more importantly it allows you the chance to create your own default systems and guidelines which can over-ride its own. An excellent practical useage of this in the *Express* office, for example, is in the case of company names and their case. The cry goes up again and again that companies are singular; Mirrorsoft *has* gone to the pub, Amstrad *is* about the release a new Cray clone, and so on. It is simply a matter of setting up this rule within the system, with a few examples and you're away. Be very careful with this.

Problems do arise with what is basically an excellent program once your piece of text has been given the once over. Any comments which were made by *Grammatik* remain embedded in the text and have to be hoiked out by you. Interactive mode, although exceedingly useful, is also rather slow. This lack of speed owes much to the freeing up the F1 key which calls up the explanatory notes. Sacrificing speed for style is the assumption here.

Aside from these quibbles, even a rabid anti-software interventionist person like myself really quite enjoyed using *Grammatik*. Unlike much software which begins to take over - see spell-checkers which use those horrible 'ize endings to words so often that you just think "to hell with it" and finish up by using them just to save you time - this style checker is actually helpful to its user. The addition of the editing facility, be careful with this as it is easy to get carried away with, serves only to make life even easier, even more easy, more easier? Hell, I don't know! Where's the checker gone. ■







• *Pressing {F1} whenever Grammatik IV detects what it believes to be an error brings up explanations and examples*

Grammatik IV Cost £115 from Roalon International
Contact: 0202 861512

THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created ... affordability.

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The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

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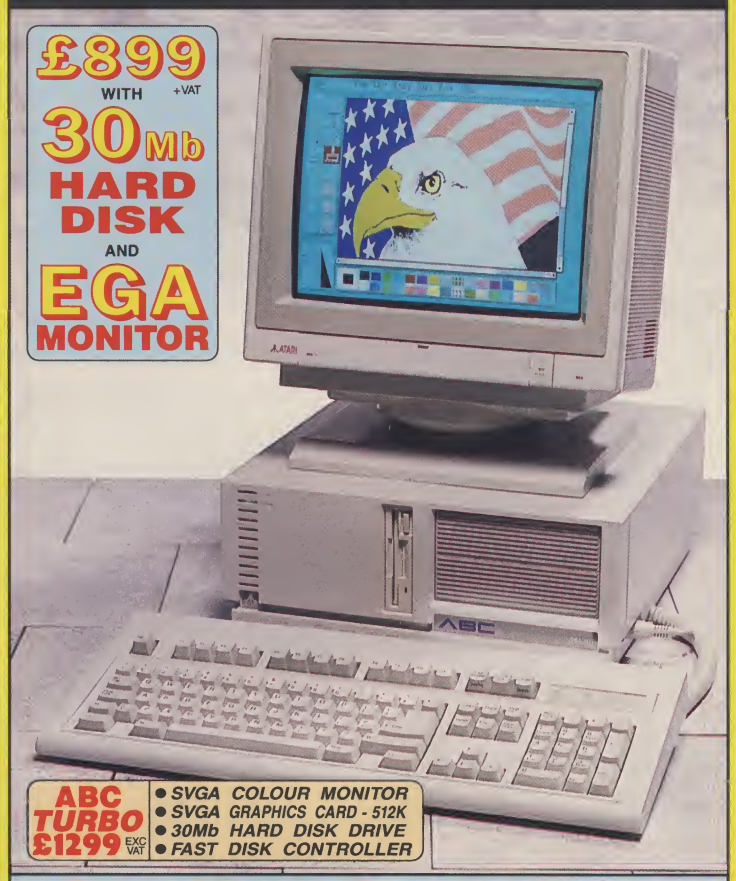

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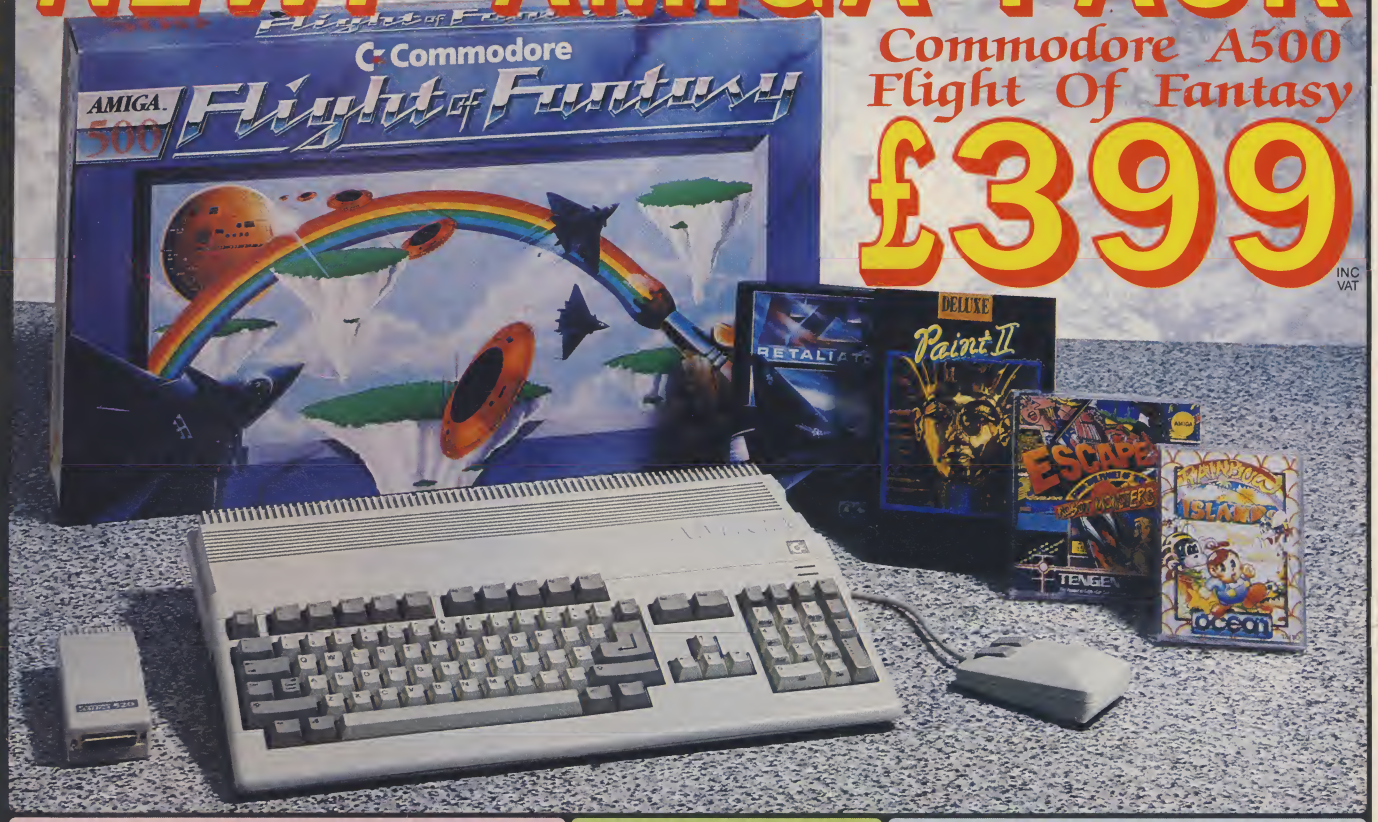

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MONTHLY COMPETITION NCE

The Express monthly competition to win a £2,000 Panasonic laser printer rolls on. This is the next question on the list. Don't forget to keep the token safe for the end of the month.

QUESTION 3:

What is the nickname of the superfast Japanese train?

A) Trigger

B) Missile

C) Bullet

WINNERS

The winners of the James Pond competition we ran a few issue ago are as follows:

Chris Pearn, Macclesfield, Cheshire.
Gregor Houghton, Fratton, Pompey.
Mrs S J Head, Coulsdon, Surrey.
P J Greenwood, Blackburn, Lancs.
David Plater, Bridport, Dorset.
S May, Deighton, Huddersfield.
Stephen Smith, Bridgeford, Notts.
Douglas O'Hare, Brighouse, W Yorks.
S Lorraine-Francis, Hartcliffe, Bristol.
M Westall, Poole, Dorset.
Spiffingly well done.

WIN THE NEWEST JOYSTICK ON THE STREETS!

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I've been doing these competitions for some time now, and yet have never made any introductions. The name is Ms Hanks and I double as the coffee machine operative for the *Express* staff. You may have read about me in those Centrefold pages. It is my arduous task to have to give things away every week; week in, week out.

This time around I have 20 Spectravideo Mega Board joysticks; and no I don't have one of my own. These things work with any machine you care to mention, well except the PC or a Cray. Each Mega Board comes with two stop watches both of which can count up and down, all the easier to time yourself and your friends with. You can also vary the autofire speed, all the better to batter the enemy with, not that battering people is a very good idea in my opinion.

The joysticks are due for release in the very near future, but you could be the first person in your conurbation to have one.

All you have to do to win one is answer the following five questions. Send your answers on the coupon to me at the Sheer Joy Competition, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW. Entries to be in by Monday November 12 1990. Coupons should be stuck on the back of a postcard or a sealed envelope.

QUESTIONS

1) Where did the band Joy Division originate?
A) Leningrad
B) Toytown
C) Manchester

2) Which game was played by a bear of little brain?
A) Yogi sticks
B) Pooh sticks
C) Goldilocks sticks (?)

3) Which famous comediene was known to say "George... don't do that"?
A) Joyce Sims
B) Joan Sims
C) Joyce Grenfel

4) A phrase among the criminal fraternity is . . .
A) You'll never take me to Rhyl copper
B) Look Ma I'm on top of the pops!
C) Stick 'em up

5) With which piece of software would you NOT use a joystick ?
A) Lotus 1-2-3
B) Kick Off
C) Xenon II

There we go. Simply fill in the coupon and send in your answers; and jolly good luck to you all.

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The answers are: 1) 2) 3) 4) 5)

Supplementary question for the mystery prize...

"Chaos Theory is fatally flawed because.....

..... **(no more than five words).**

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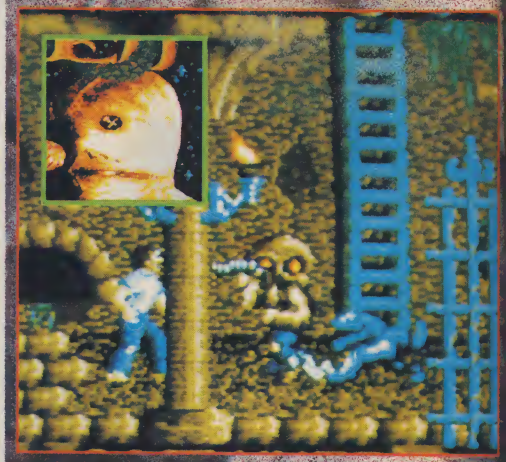

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